

# Tab 1



US007107338B1

(12) **United States Patent**  
Nareddy et al.

(10) **Patent No.:** US 7,107,338 B1  
(45) **Date of Patent:** \*Sep. 12, 2006

(54) **PARSING NAVIGATION INFORMATION TO IDENTIFY INTERACTIONS BASED ON THE TIMES OF THEIR OCCURRENCES**

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(73) Assignee: Revenue Science, Inc., Bellevue, WA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1018 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 10/005,183

(22) Filed: Dec. 5, 2001

(51) Int. Cl.  
*G06F 15/173* (2006.01)

(52) U.S. Cl. .... 709/224; 709/203; 709/218;  
709/223; 707/6

(58) **Field of Classification Search** .... 709/223,  
709/224, 203, 200, 202, 229, 217-219, 245;  
715/853, 854; 707/1, 3, 6, 100

See application file for complete search history.

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*Primary Examiner*—Saleh Najjar

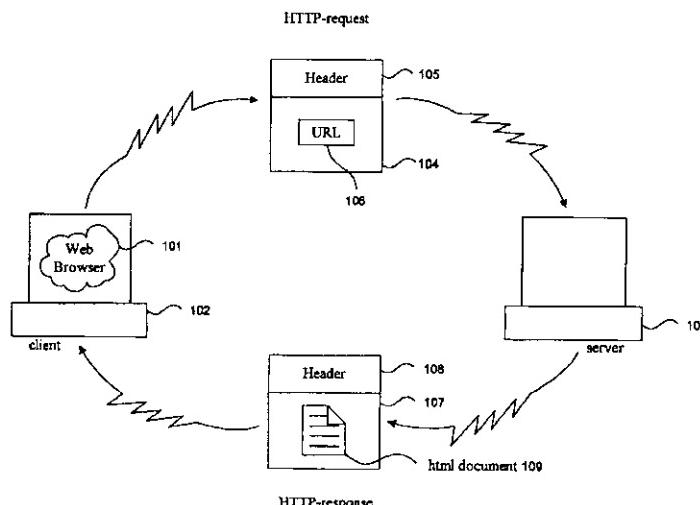
*Assistant Examiner*—V. Korobov

(74) *Attorney, Agent, or Firm*—Perkins Coie LLP

(57) **ABSTRACT**

A method, system and computer-readable medium for analyzing interaction or usage data, such as for customers, is described. Various data parsing information may be defined and used as part of the analysis, such as by using customer-specific information to identify various occurrences of interest. For example, the parser component can use data defining customer-specific categories of content set items and customer-specific types of events of interest. Such high-level types of occurrences can be specified in a variety of ways, such as by using a combination of a logical web site, one or more URLs corresponding to web pages, and/or one or more query strings. In addition, in order to associate the appropriate data parsing information with data to be processed, the data parsing information can also include version information that specifies when it is applicable. The data parsing information may also map actual web sites to logical sites.

44 Claims, 60 Drawing Sheets



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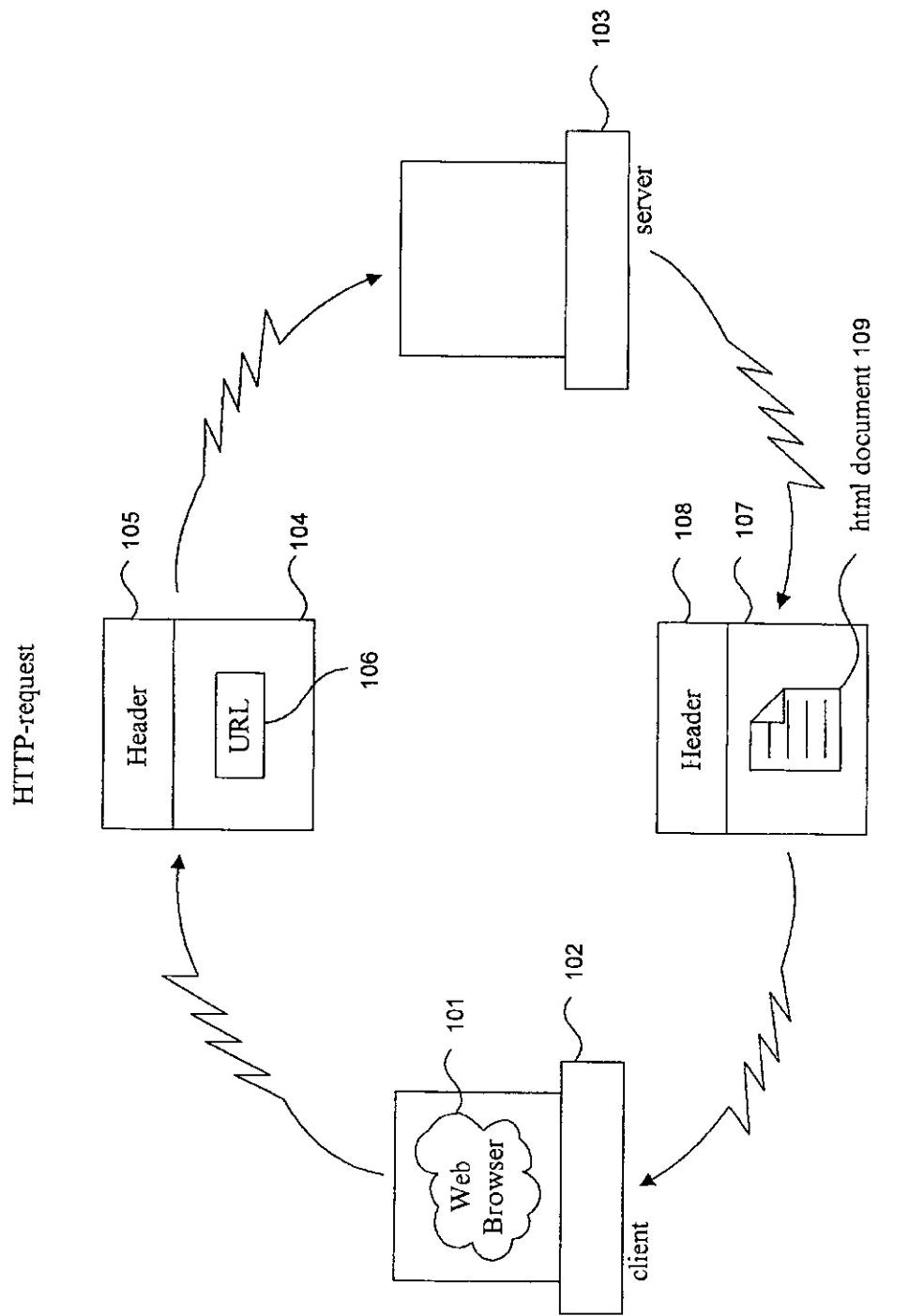
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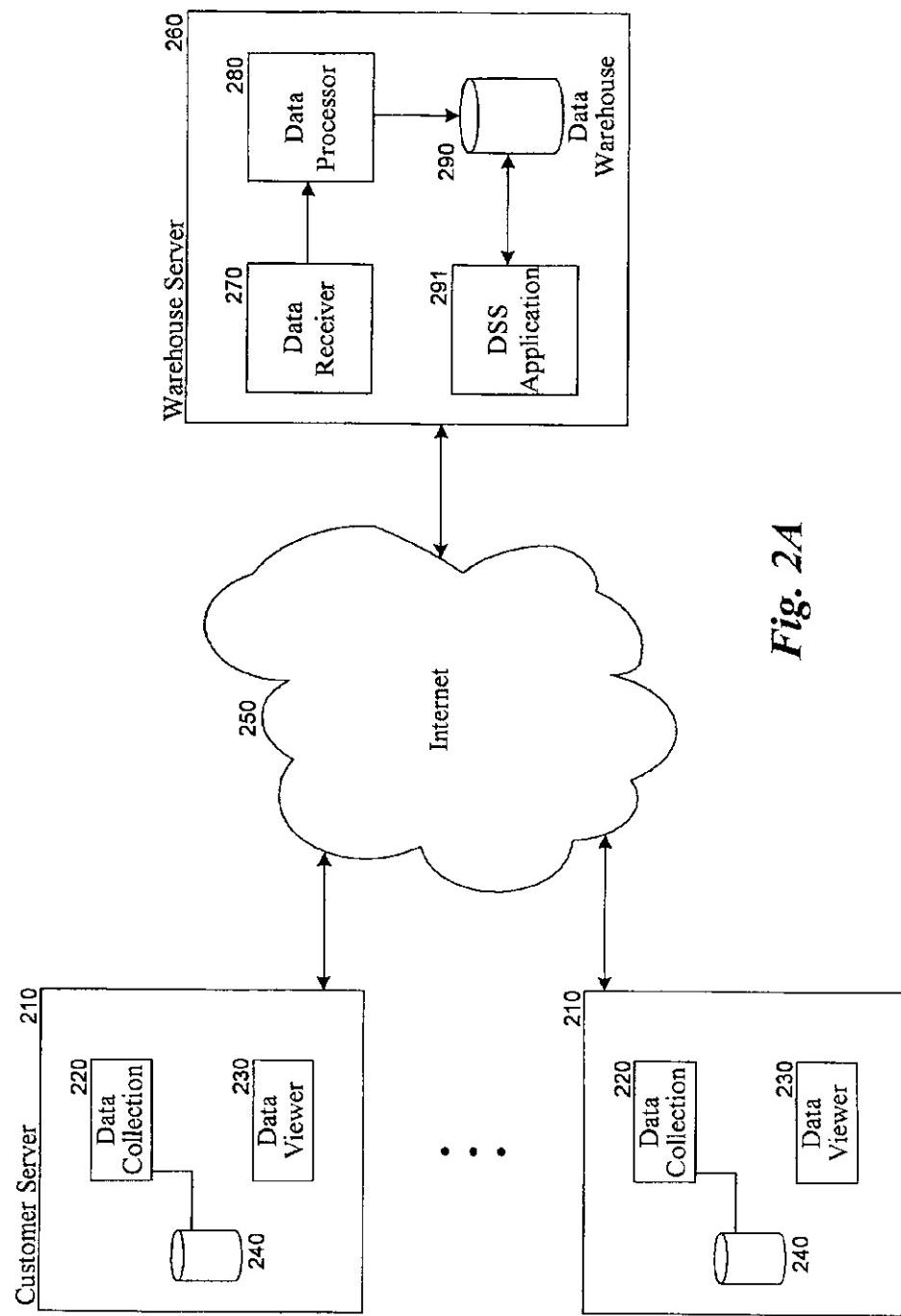


Fig. 2A

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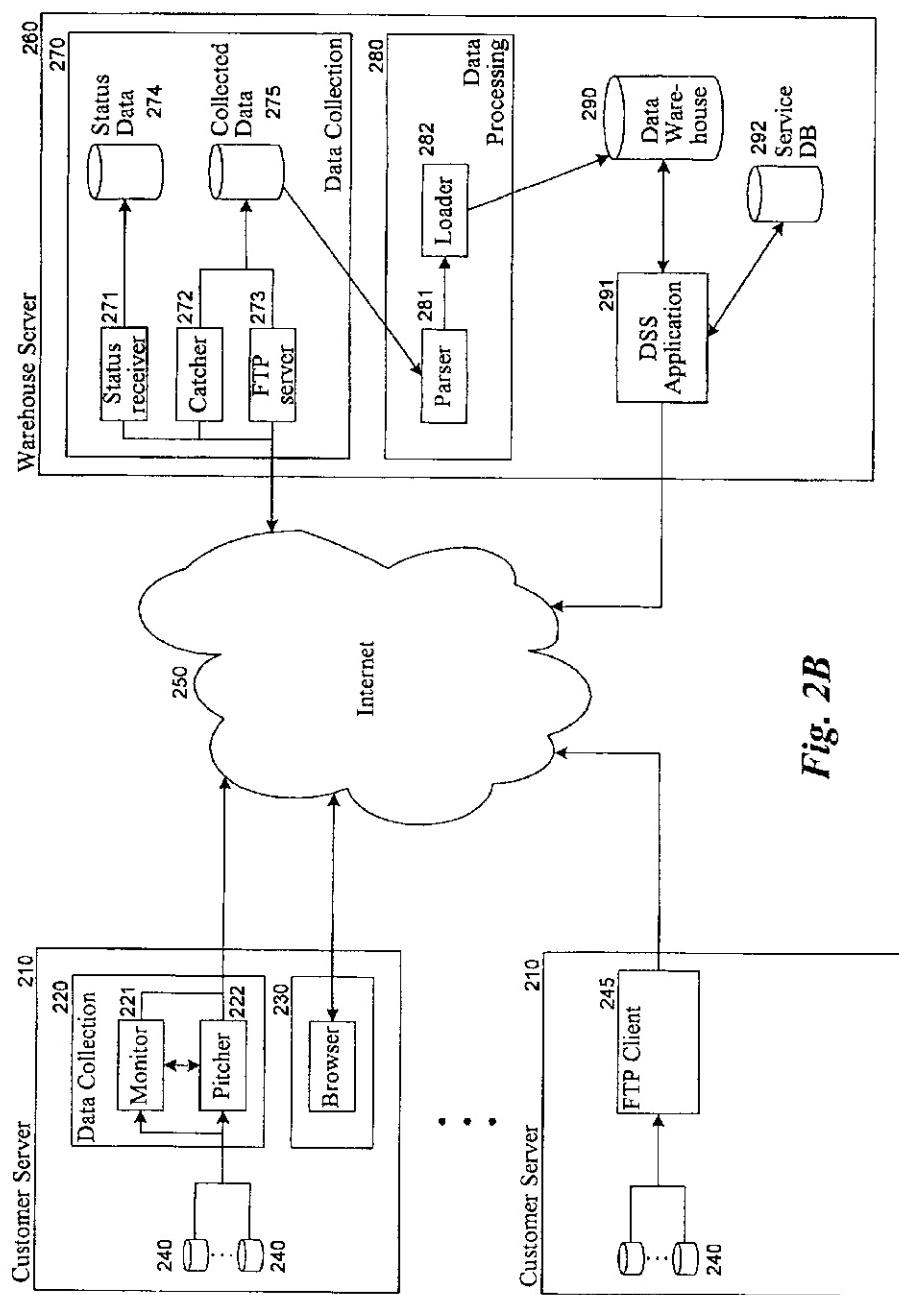


Fig. 2B

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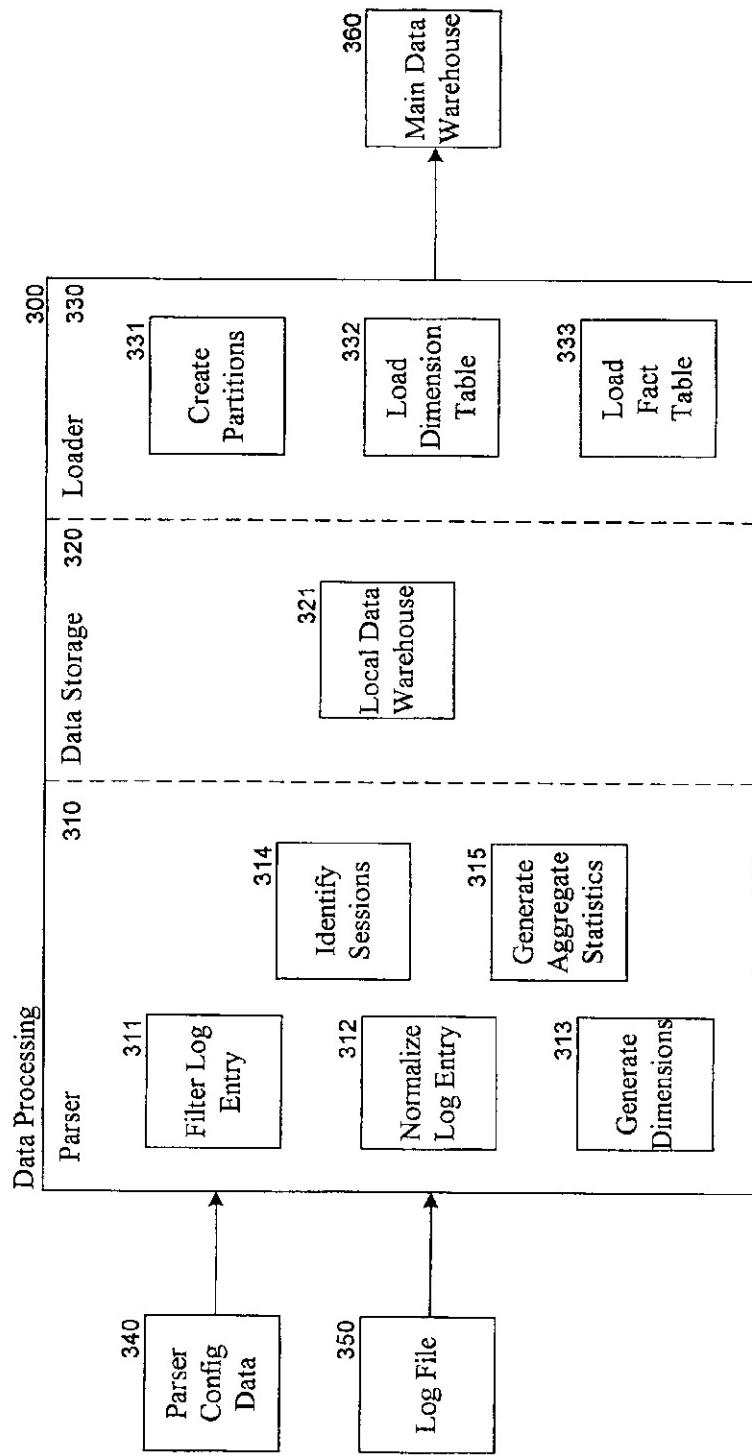


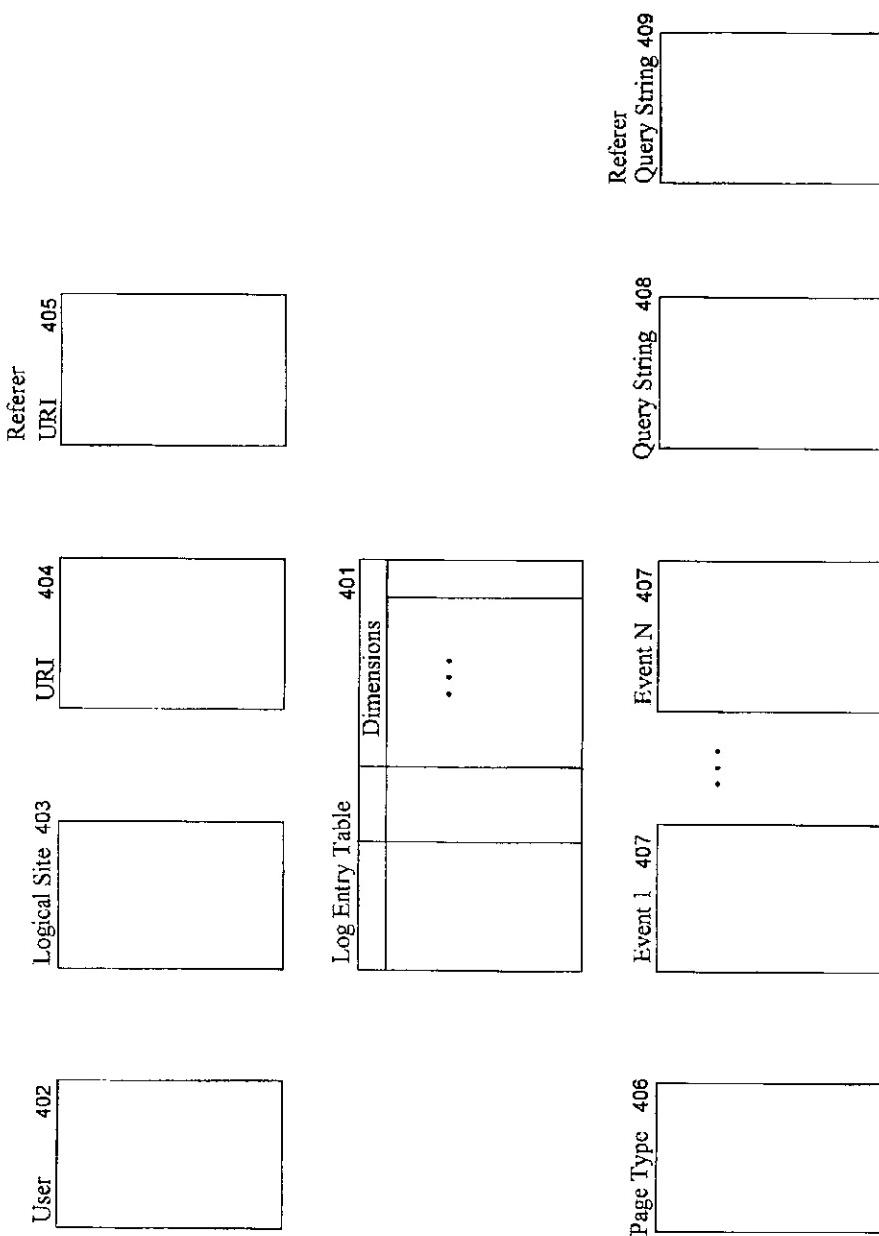
Fig. 3

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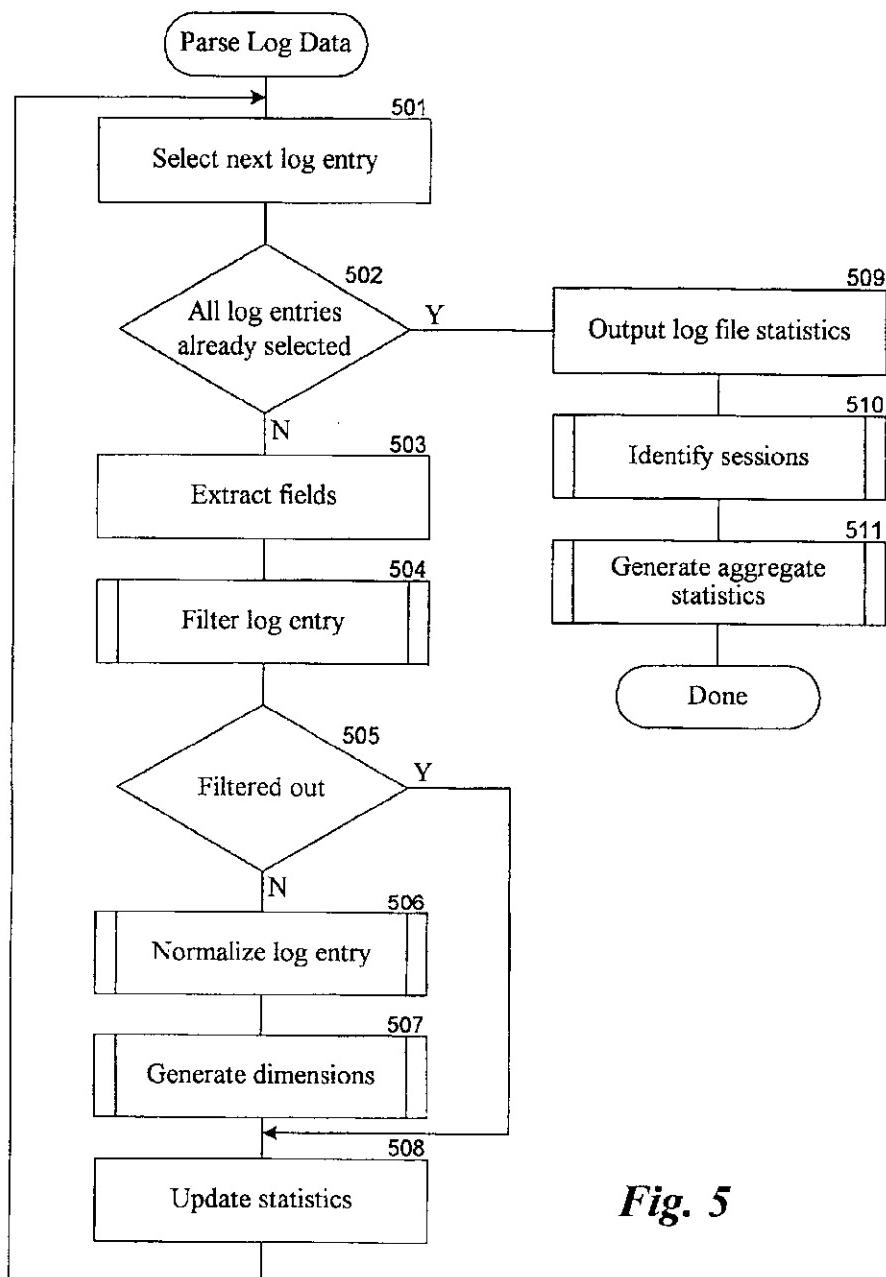
**Fig. 4**

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**Fig. 5**

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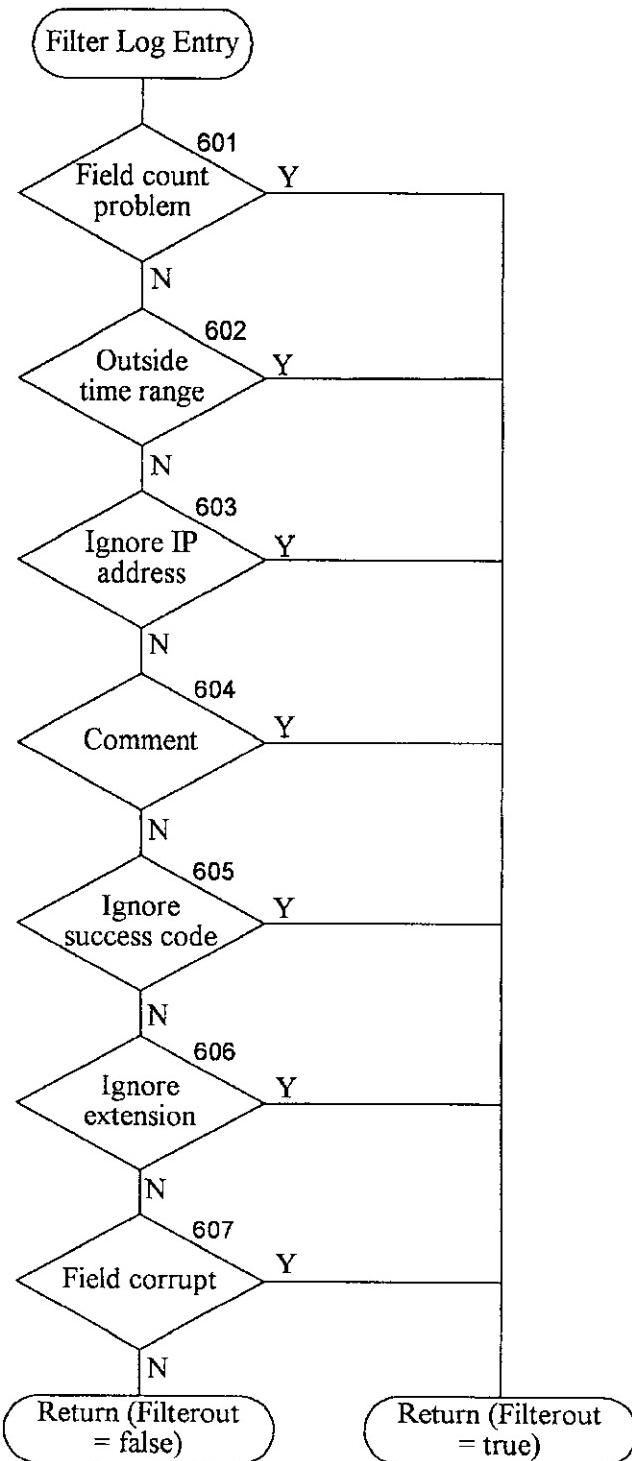


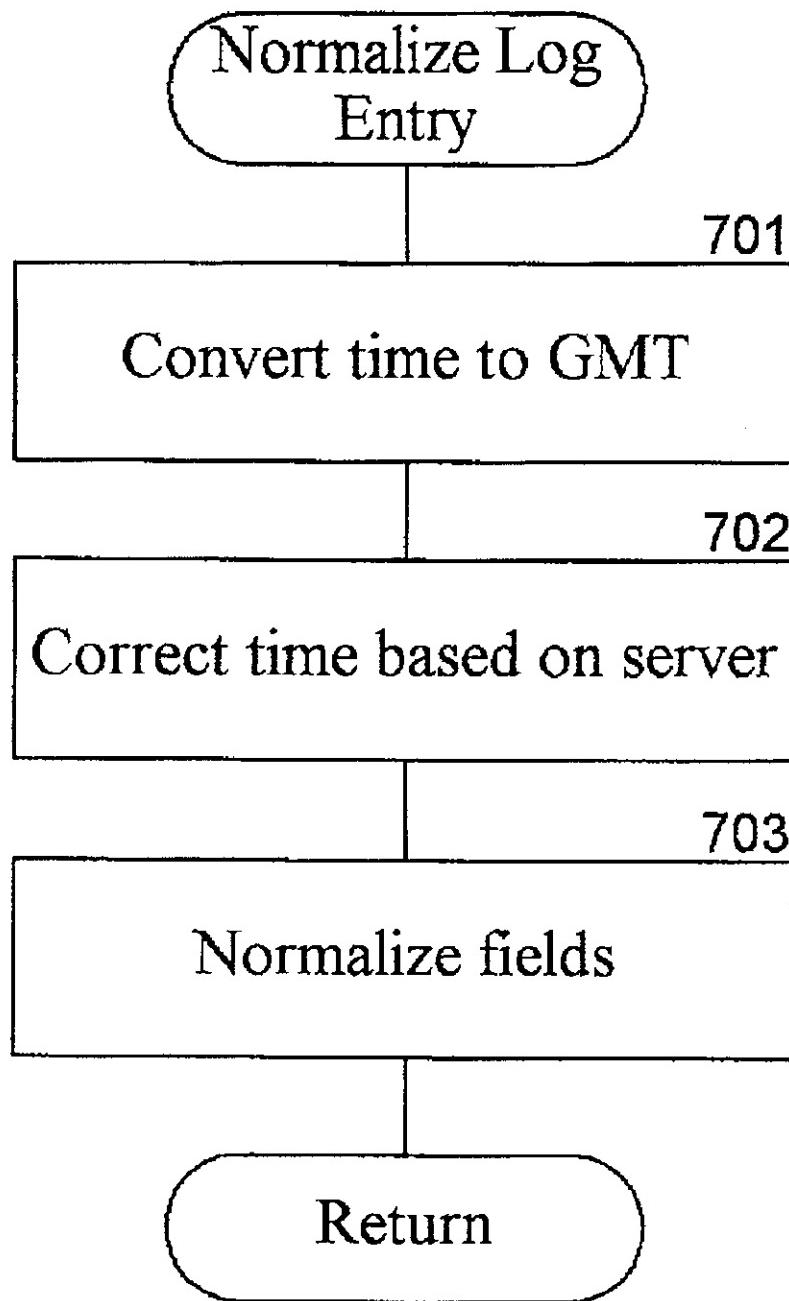
Fig. 6

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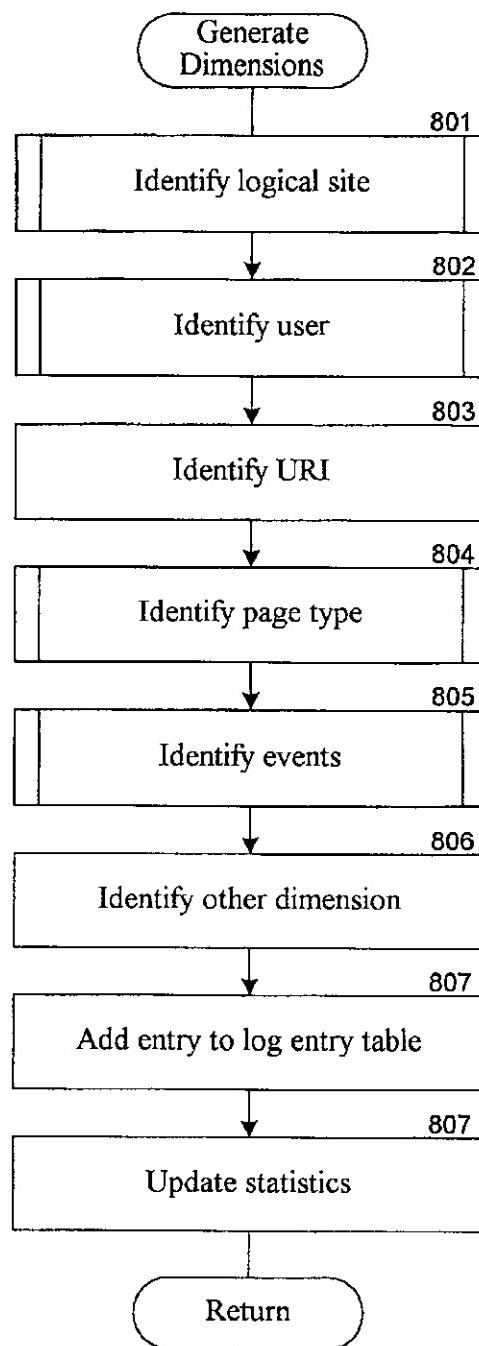
***Fig. 7***

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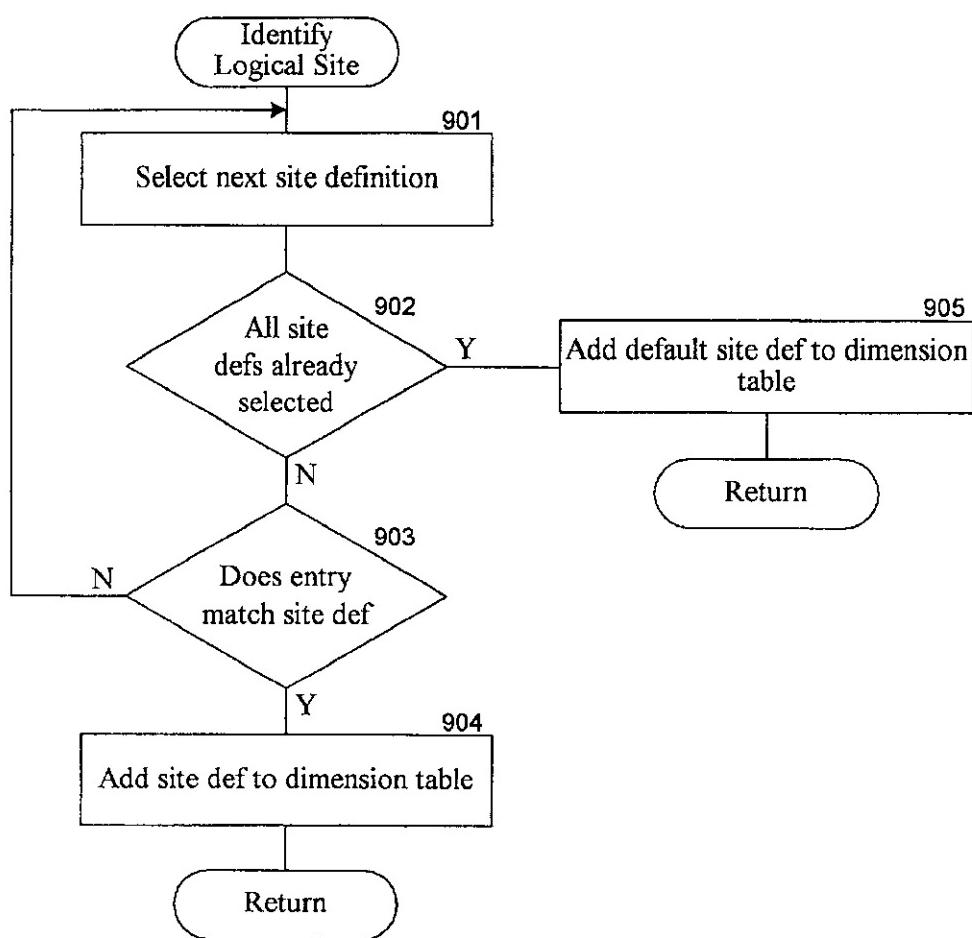
*Fig. 8*

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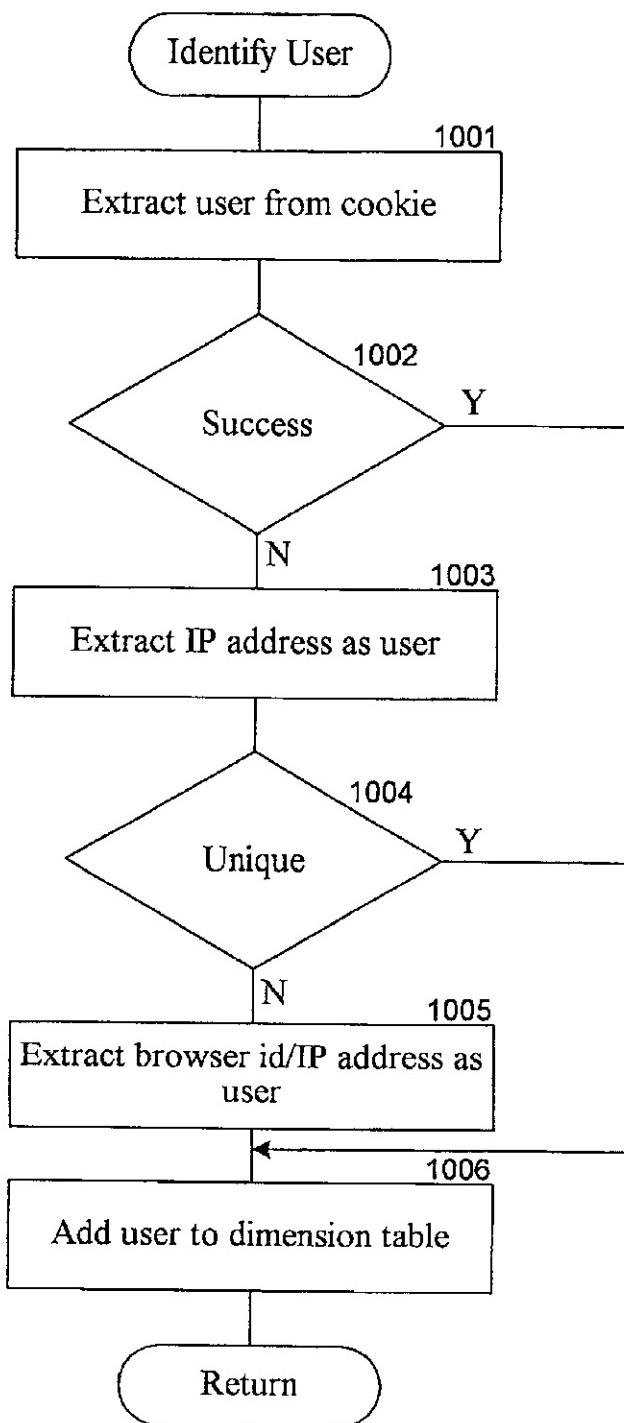
**Fig. 9**

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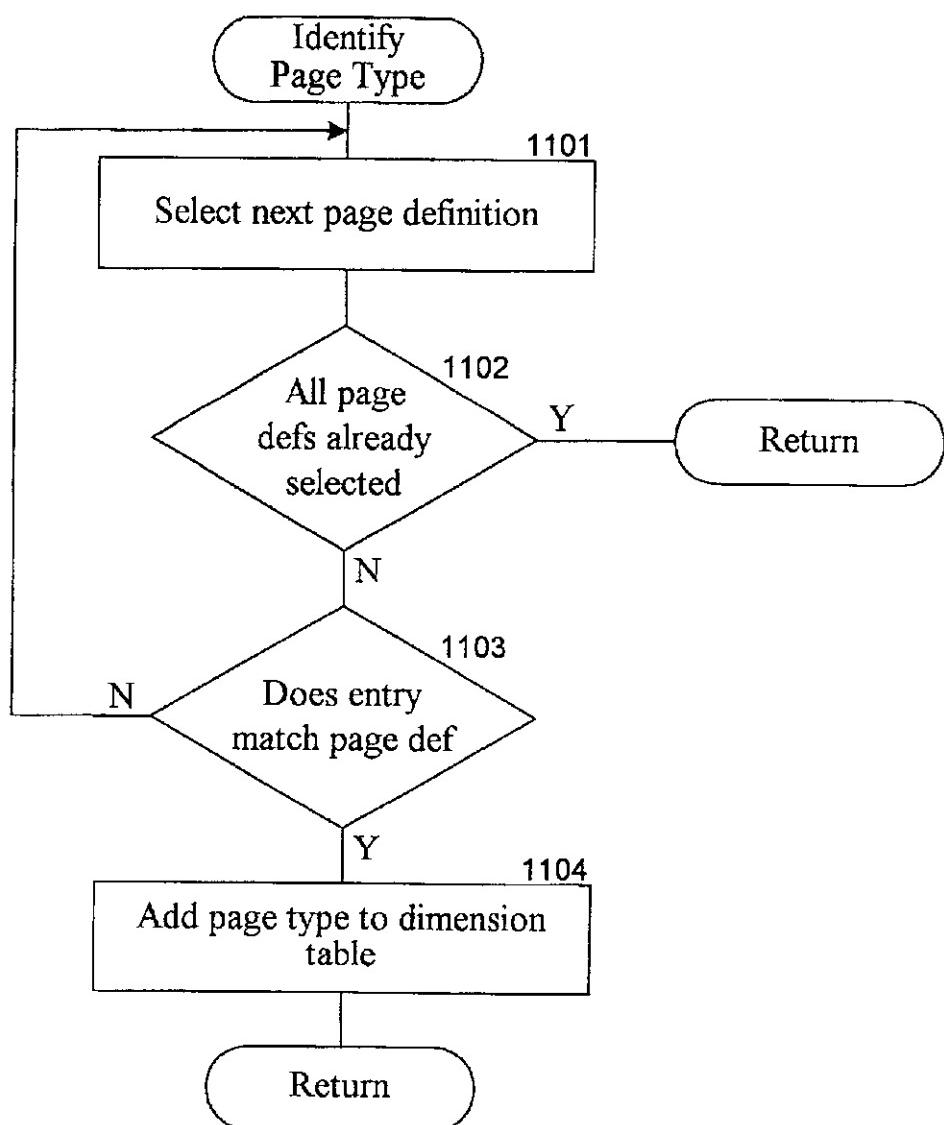
***Fig. 10***

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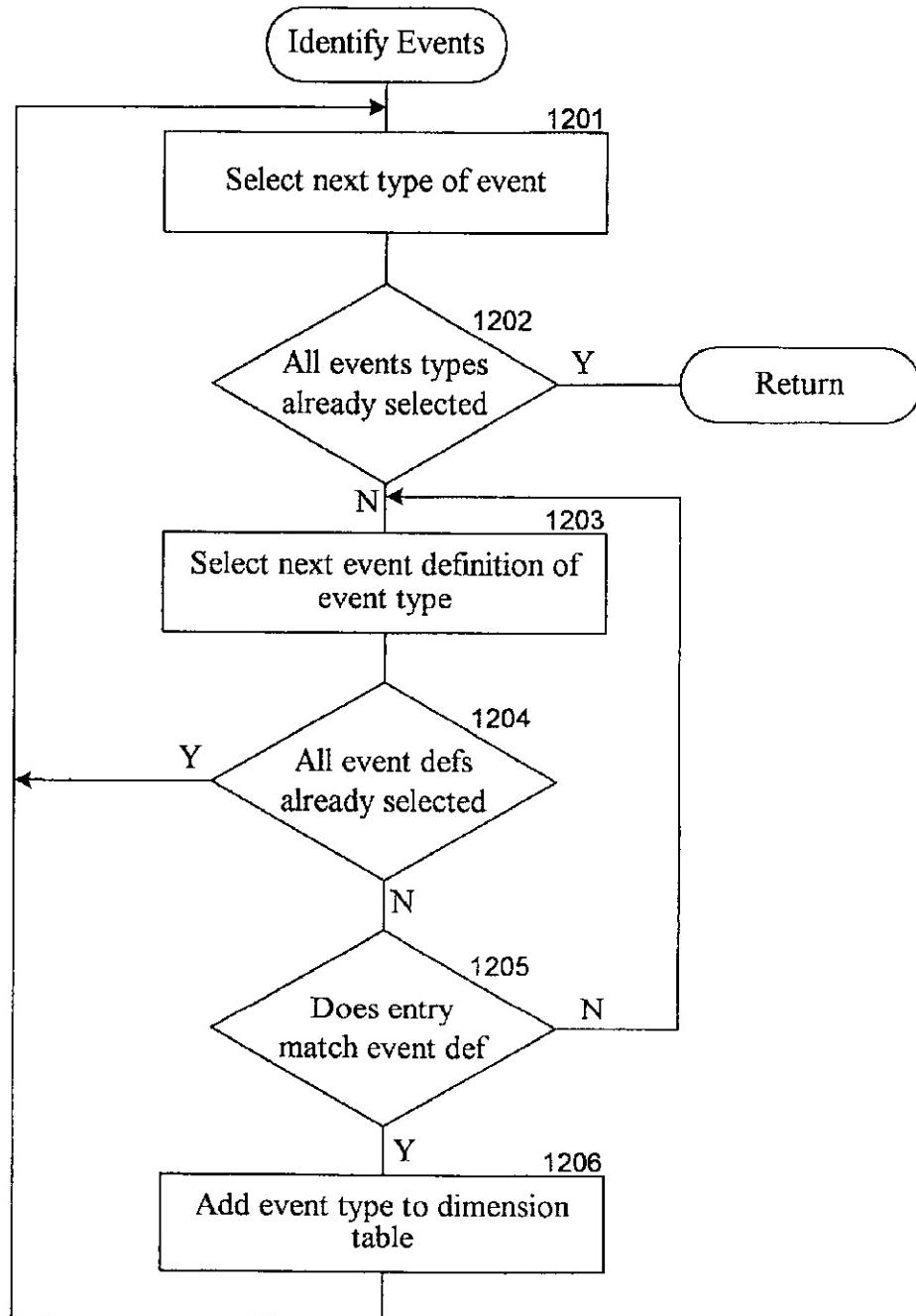
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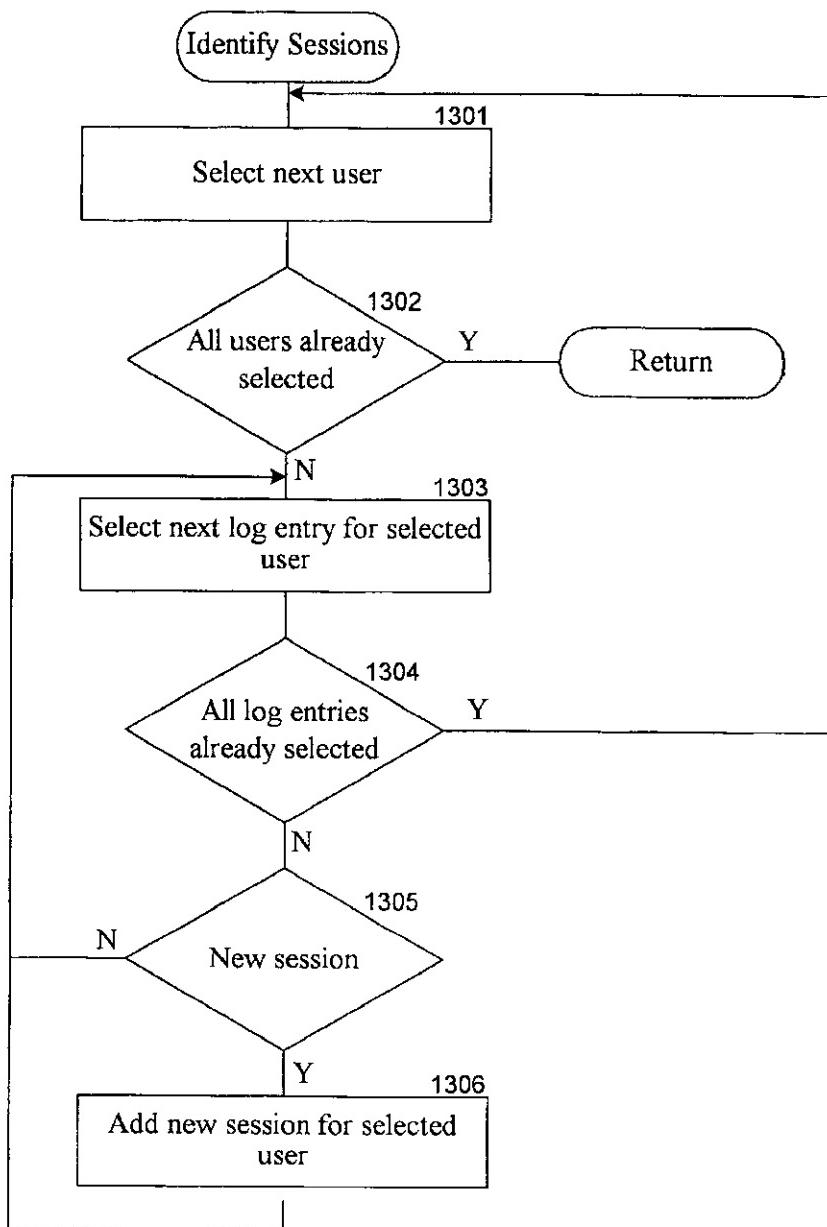
*Fig. 12*

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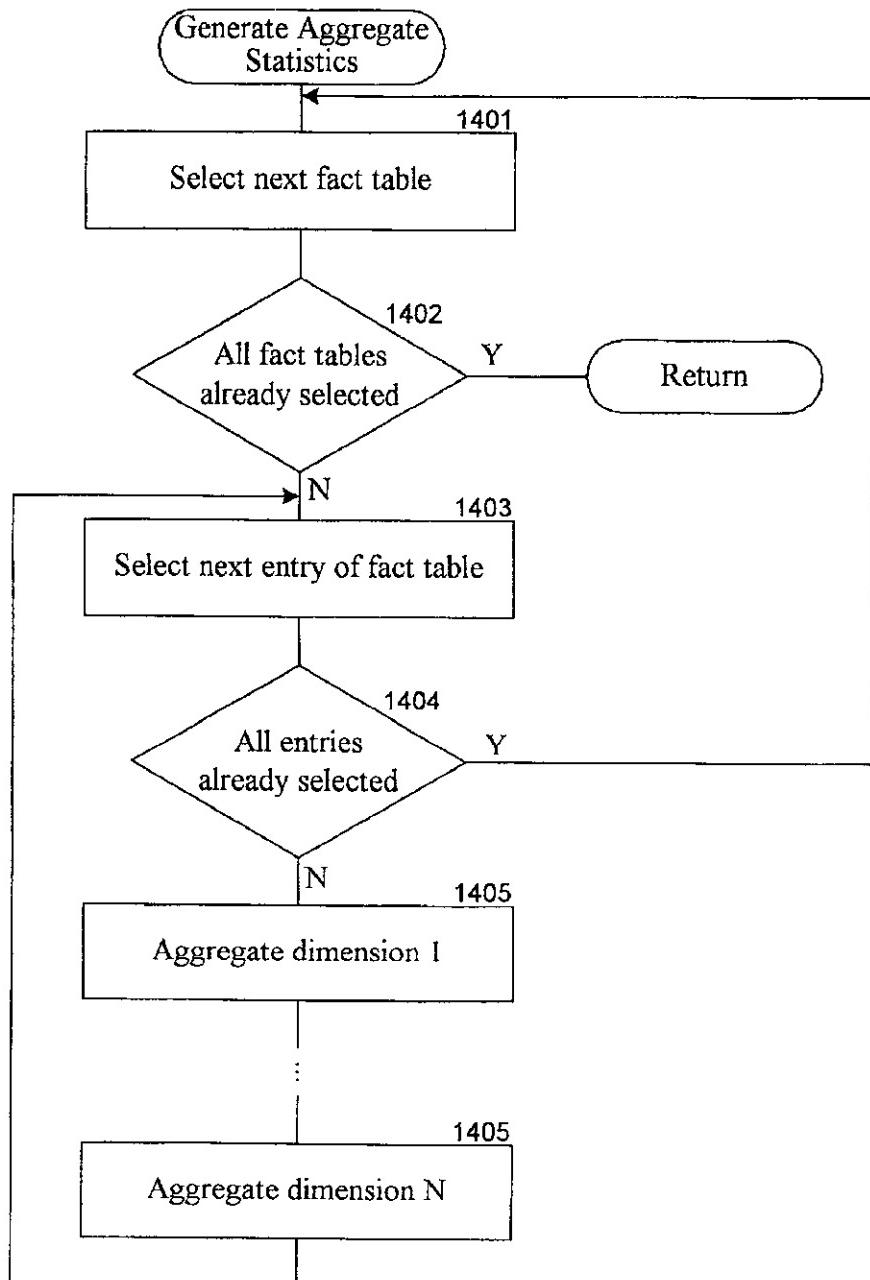
*Fig. 13*

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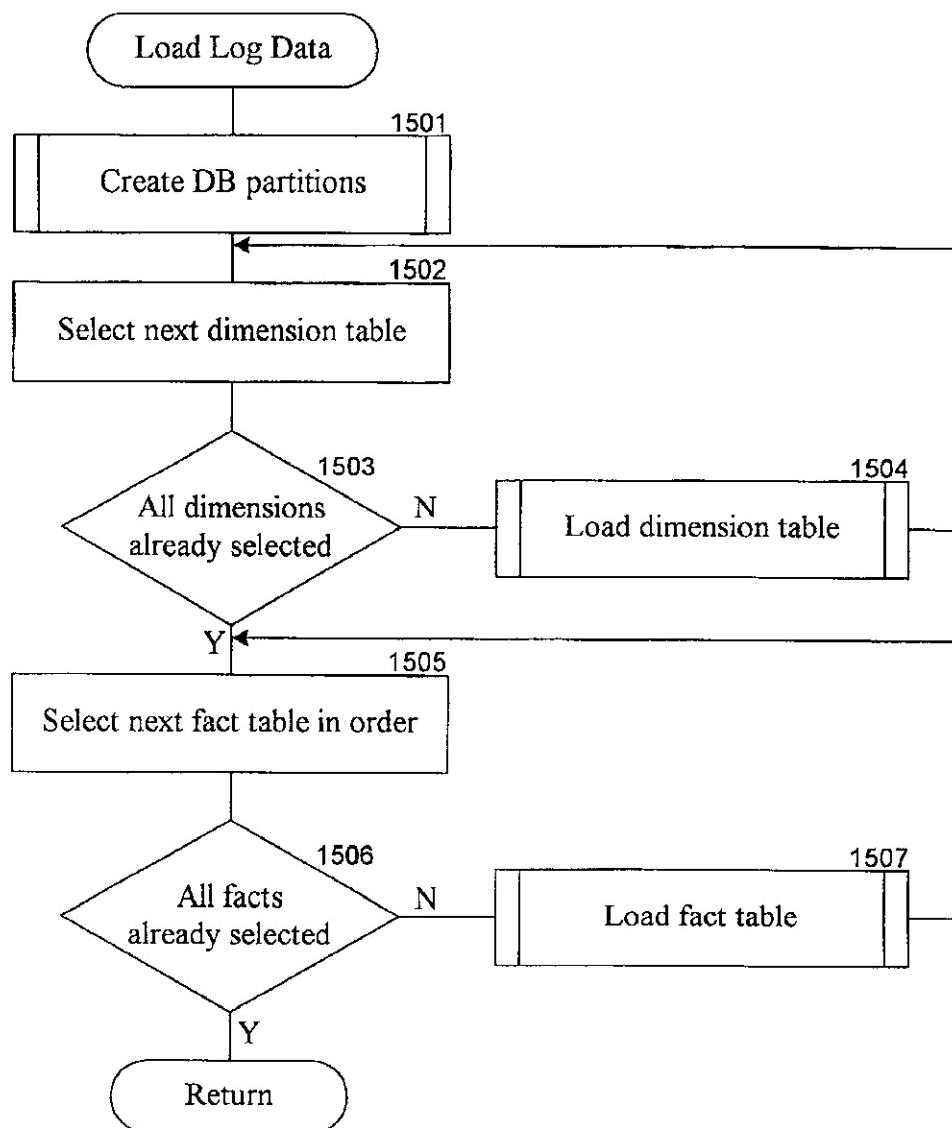
*Fig. 14*

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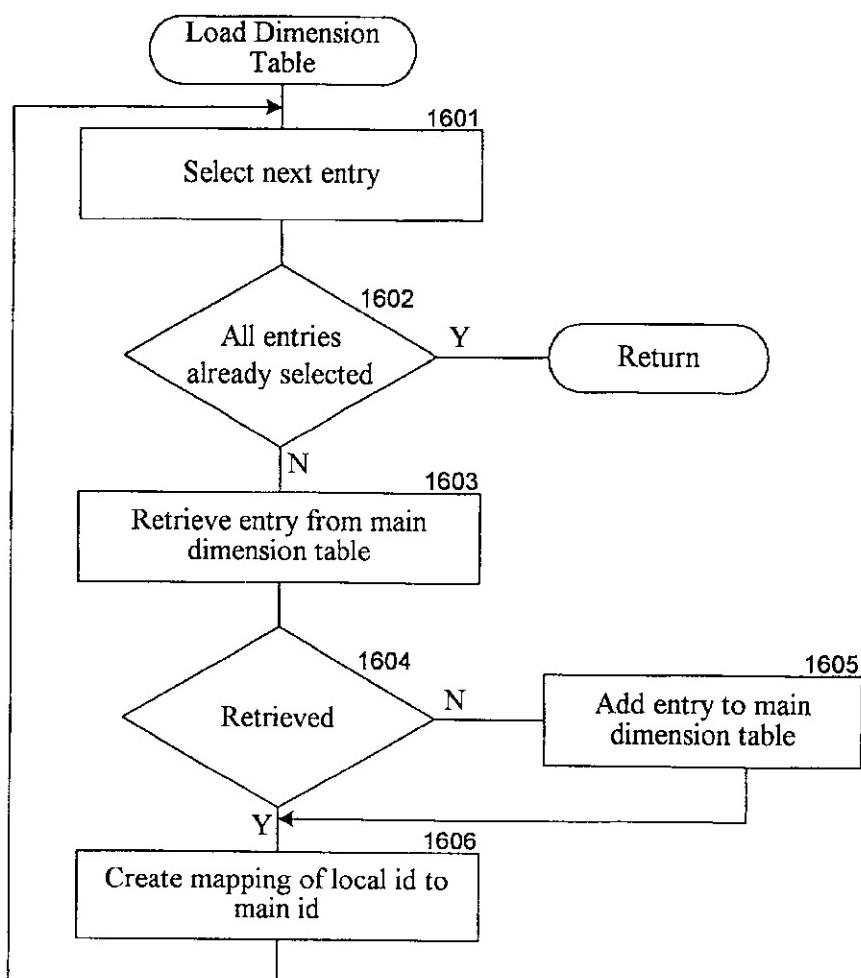
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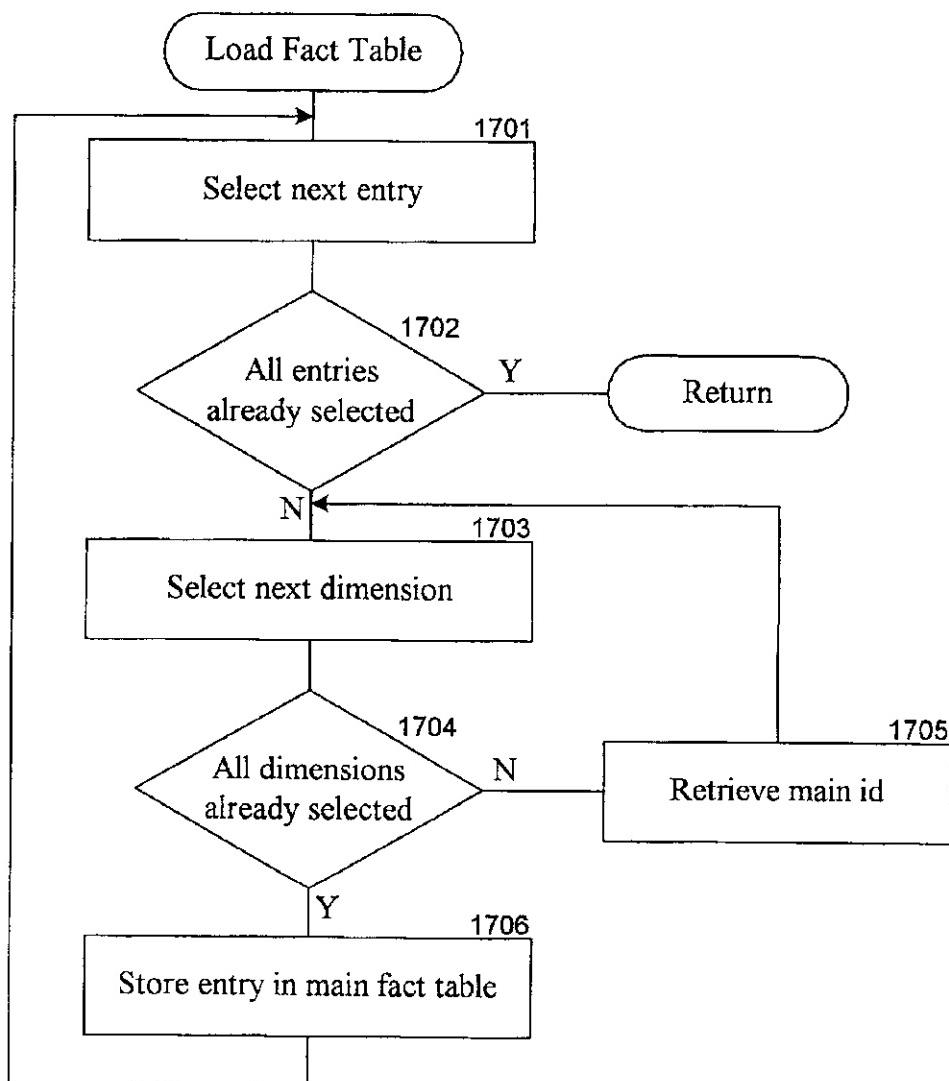
*Fig. 16*

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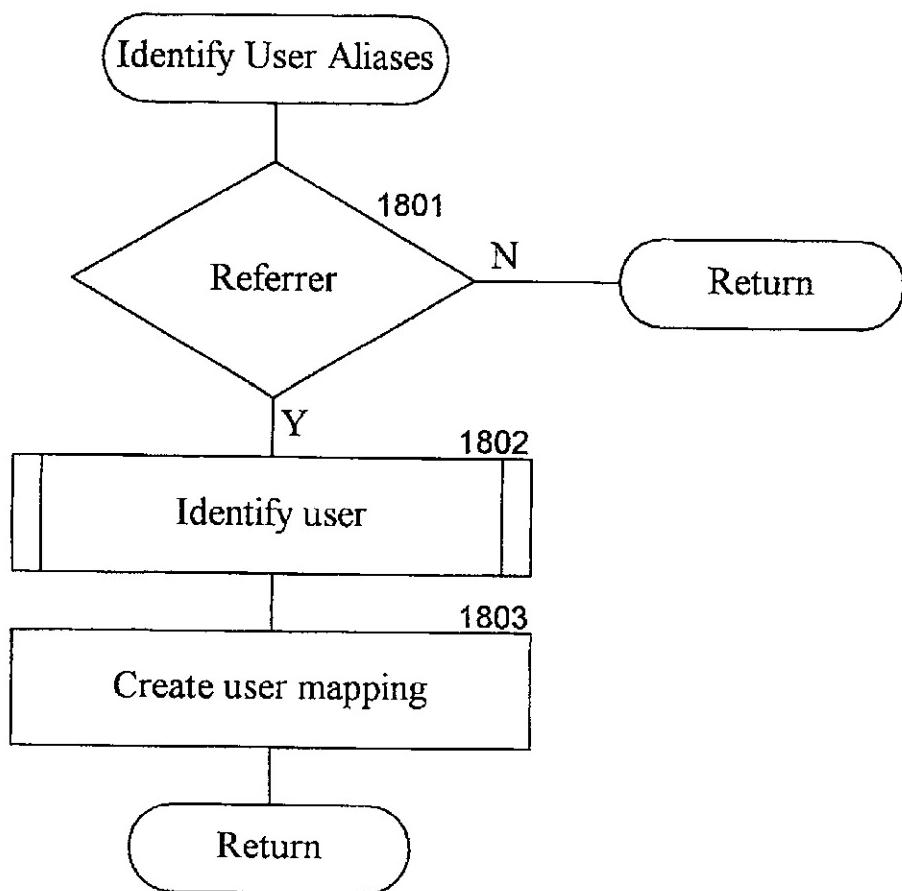
*Fig. 17*

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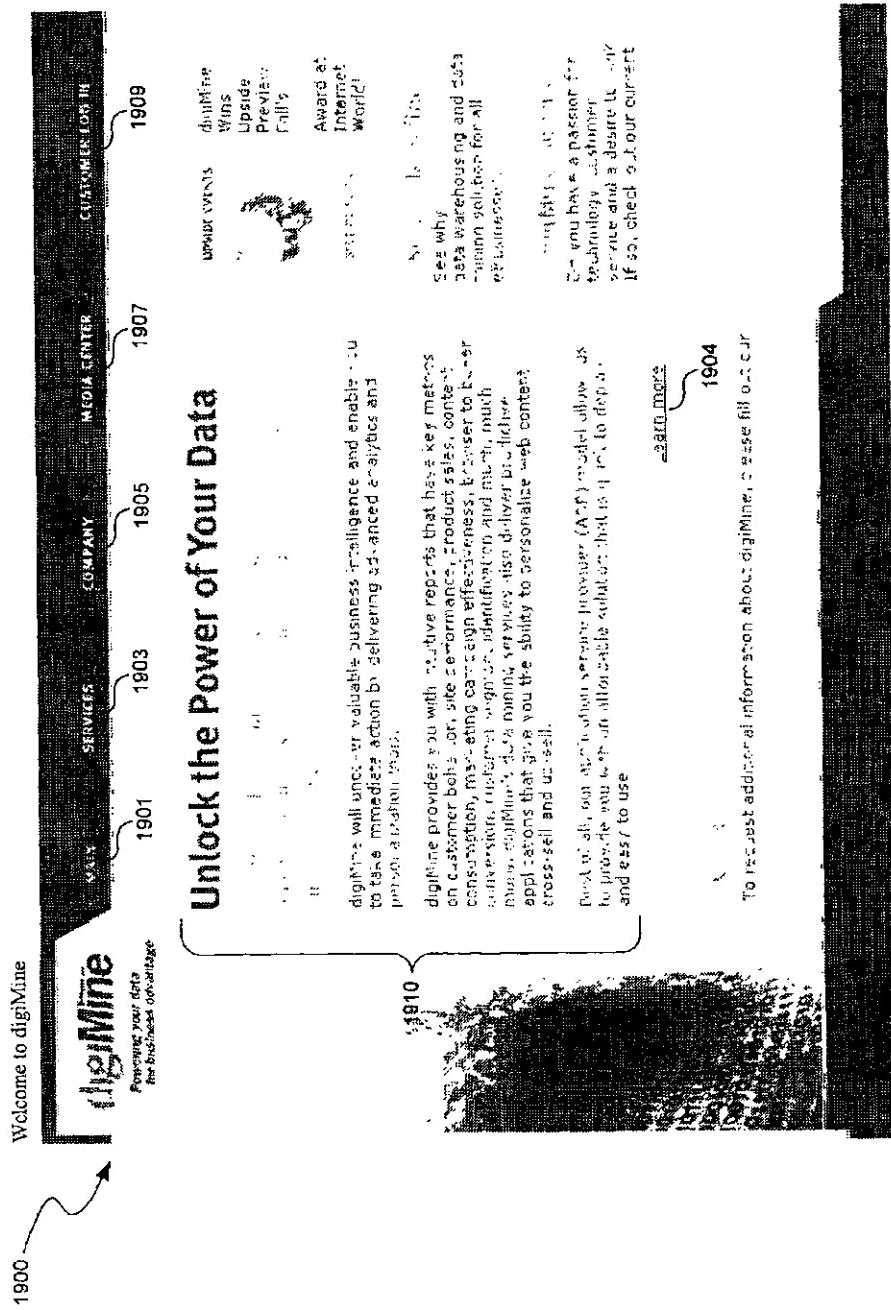
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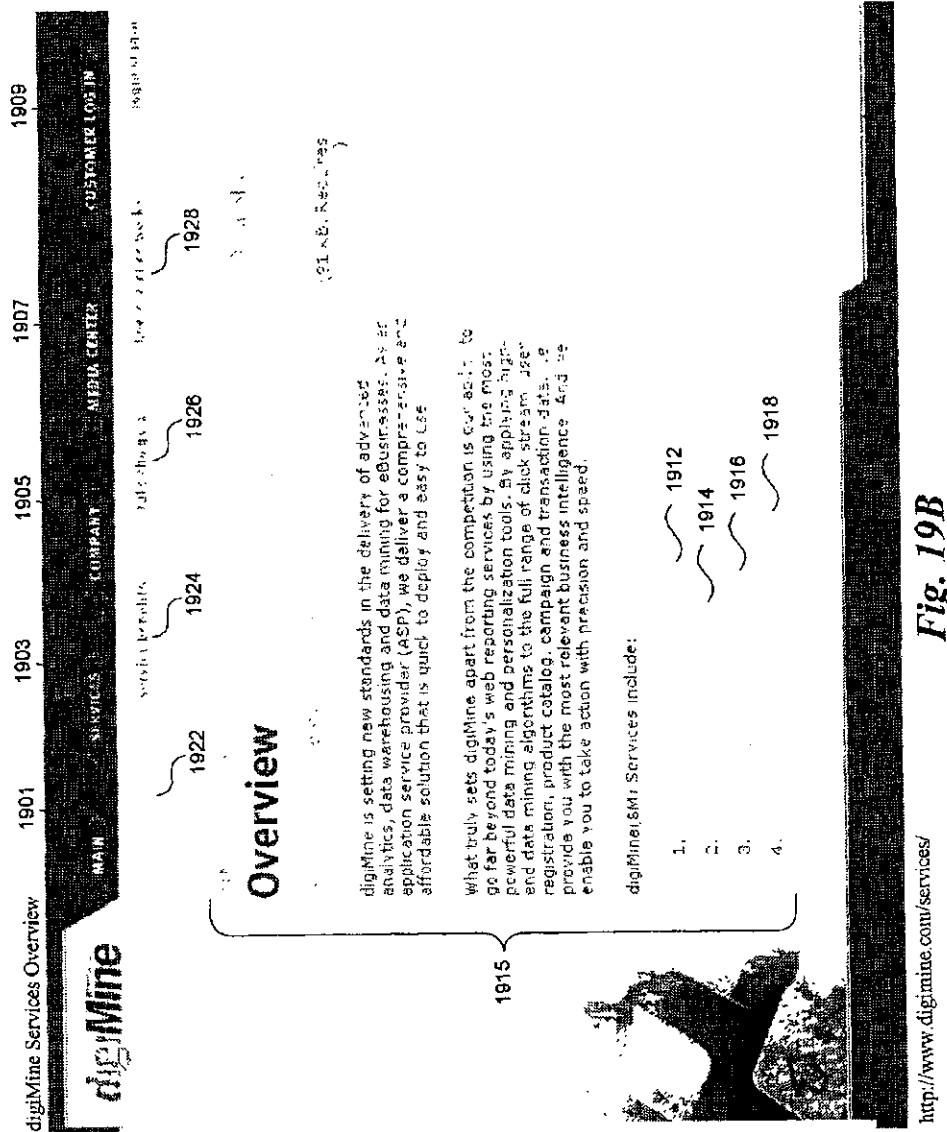


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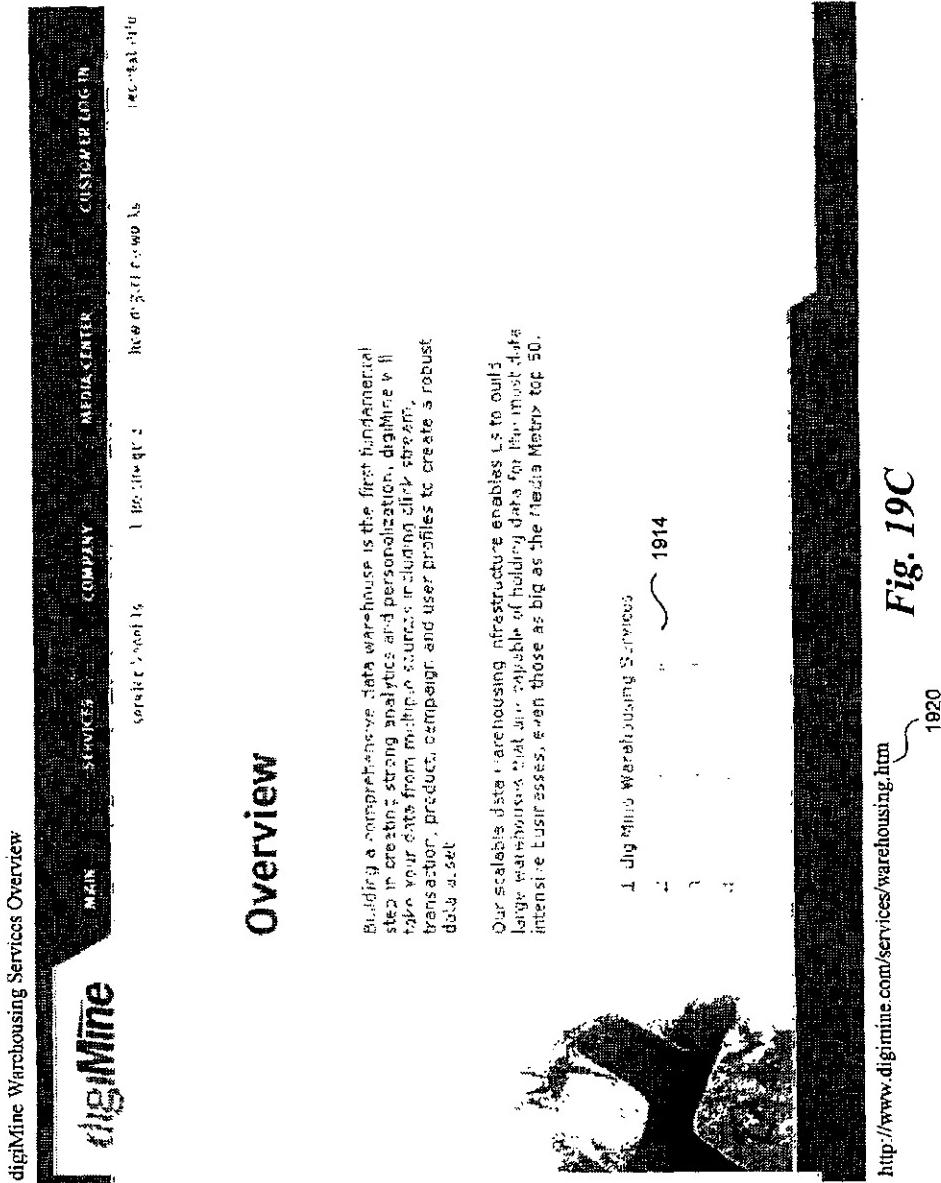


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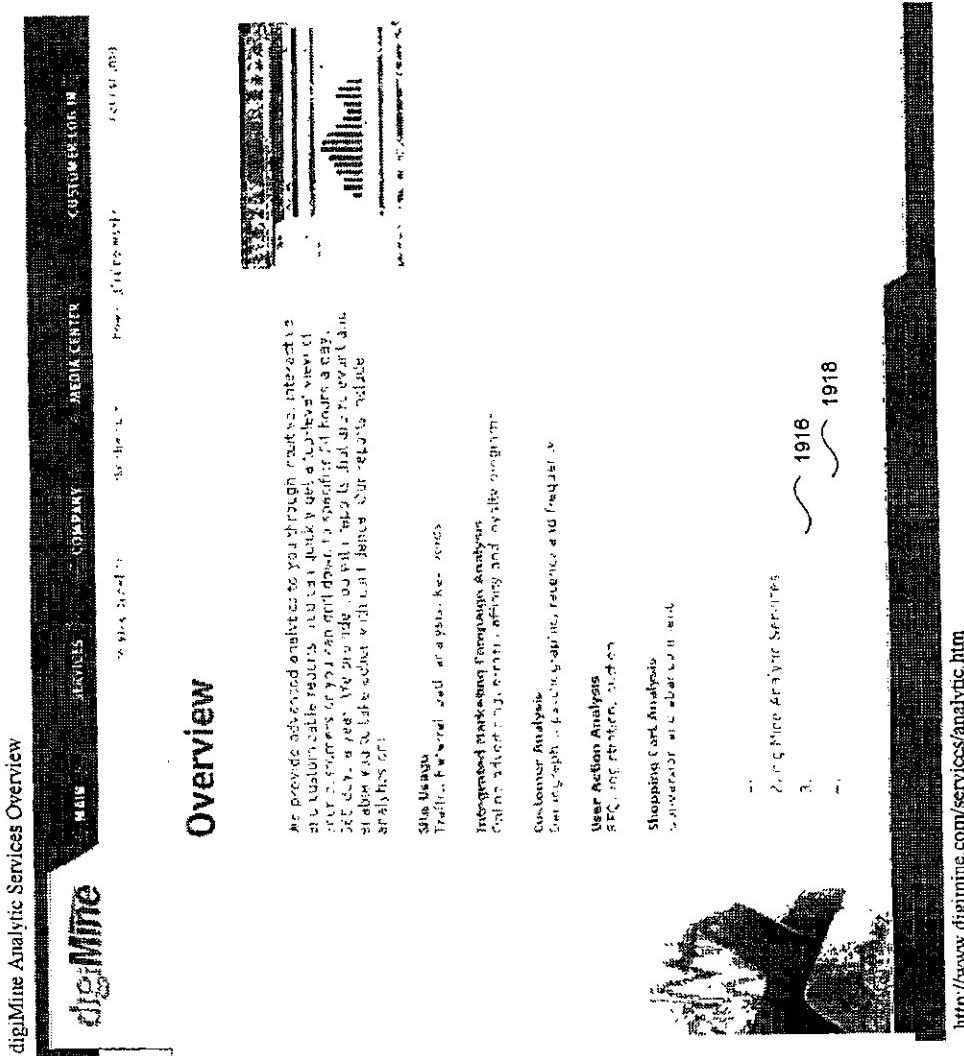


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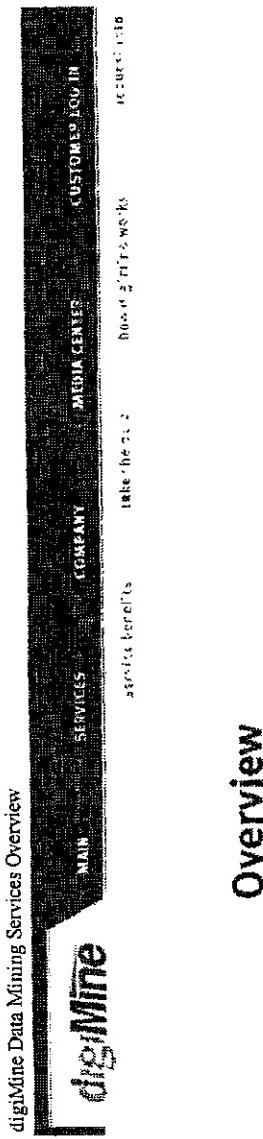
*Fig. 19D*<http://www.digimine.com/services/analytic.htm>

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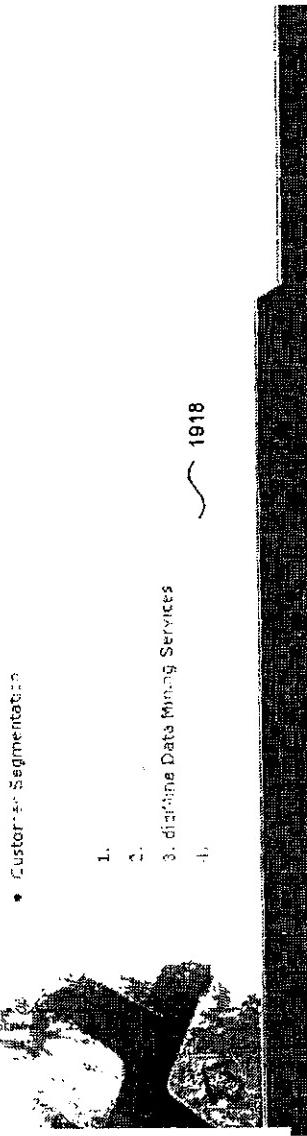
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## Overview

digMine applies advanced data mining algorithms to provide you with the most powerful services available. Our algorithm's identify patterns in the data that can deliver new insight into consumer behaviour. These analyses, coupled with our unique reporting interface, give you the confidence you need to make timely decisions with confidence.

- Person Sification
- Cross Sell and UpSell
- Channel Engagement
- Affinity Segmentation + Predictive Content Segmentation
- Customer Segmentation



<http://www.digmine.com/services/mining.htm>

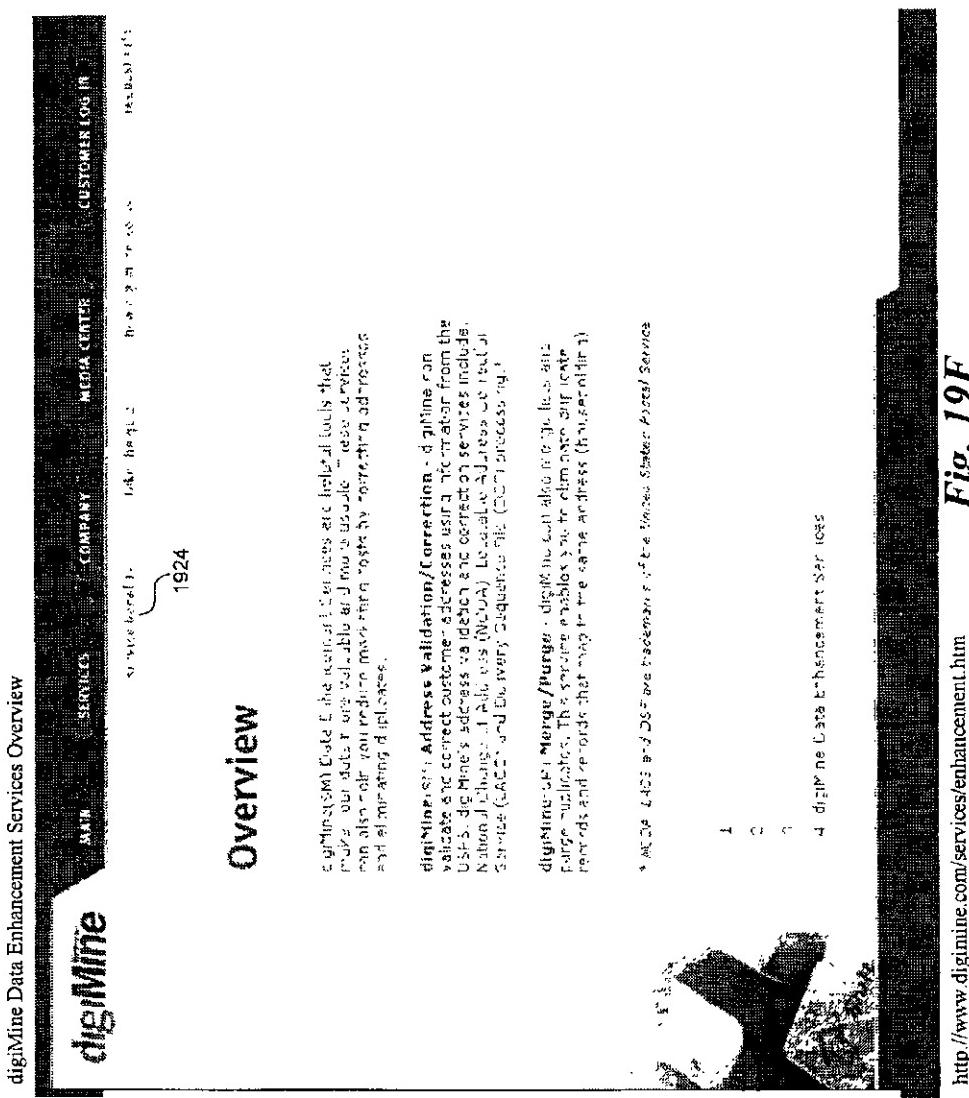
*Fig. 19E*

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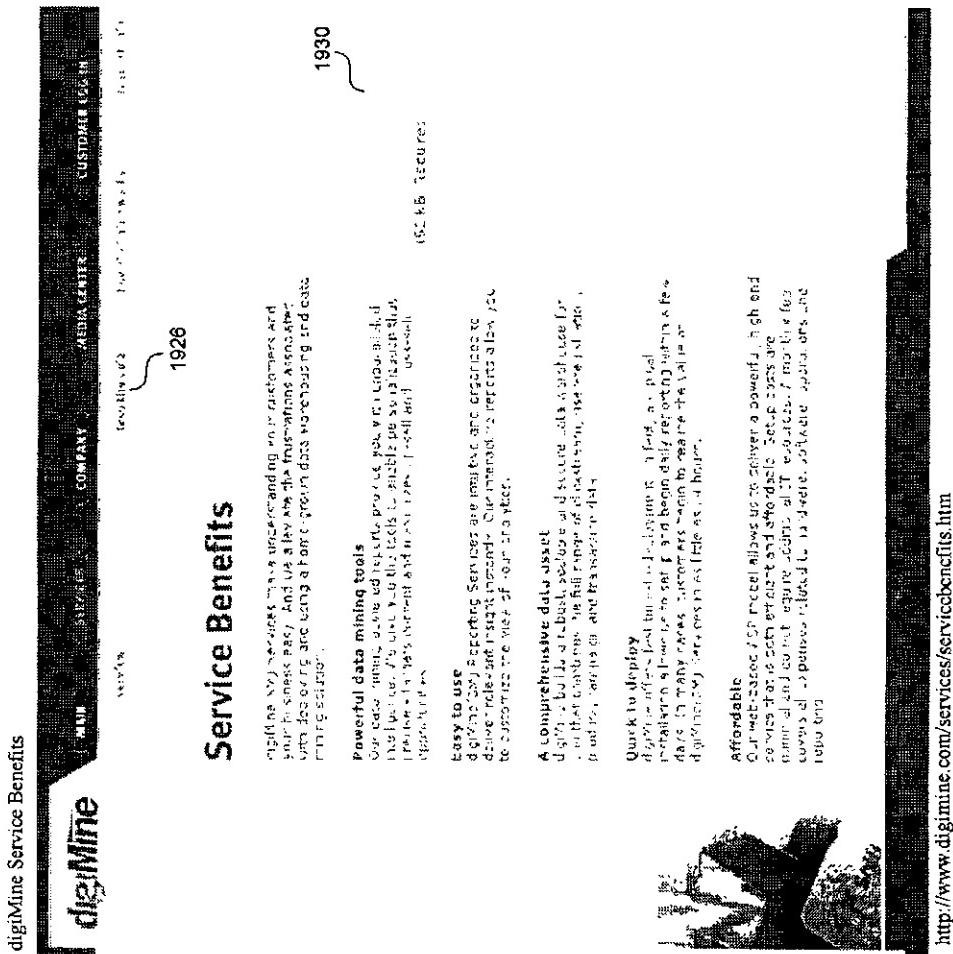


Fig. 19G

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*Powering your data for business advantage™*

**digMine®**

## Unlock the Power of Your Data

**Overview**

If you're like most businesses, you are generating huge volumes of valuable data—data that can reveal two lists and details of potential and actual customers about your products, services and website. Do you have the infrastructure and tools in place to turn your data into actionable business intelligence?

digMine, Inc. is setting new standards in the delivery of powerful analysis and predictive modeling services. Our data mining services provide you with intuitive reports to understand customer behavior, track sales, compare effectiveness of promotions, cross-sell, up-sell, upsell, segmentation, customer segment identification and much more. digMine's data mining services also deliver predictive applications that give you the ability to personalized web content, cross-sell and upsell.

digMine is the only truly ASP application service provider for sophisticated data warehousing and data mining solutions. We go far beyond today's web hosting packages by building a comprehensive data warehouse and by applying data mining tools to the full range of click stream, user registration, product catalog, campaign and transaction data. And our ASP model enables us to provide you with an affordable solution that's quick to deploy and easy to use.

**Service Benefits**

**Powerful data mining tools**

Our data mining services will provide you with unparalleled intelligence. We give you the tools you need to create personalization that promotes sales, content and maximizes up-sell and cross-sell opportunities.

**Comprehensive data asset**

We take your multiple sources of data and build a robust data warehouse for you—a single, no manual step in extracting the greatest value from your data. Our scalable data warehousing infrastructure enables us to build customer specific warehouses that are capable of holding data for the most data intensive businesses.

**digMine, Inc.'s reports provide actionable insight into customer behavior.**

**Do you know enough about your customers?**

How many of these questions can you answer today? You may not be able to currently answer a few. With digMine, you will be able to answer those questions and more.

*Fig. 19H*

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**Affordable**

Our web-based ASP model allows us to deliver a powerful, high-end service that is efficient and affordable. Setup costs are minimal and do not require additional IT resources. Fixed monthly fees cover all expenses related to hardware, software, operations and reporting.

**Easy-to-use**

digIMine™ Reporting Services are intuitive and organized to deliver relevant insight instantly. Our interactive reports allow you to customize your view of your analytics. And you don't have to be a statistician to understand your data.

**Quick to deploy**

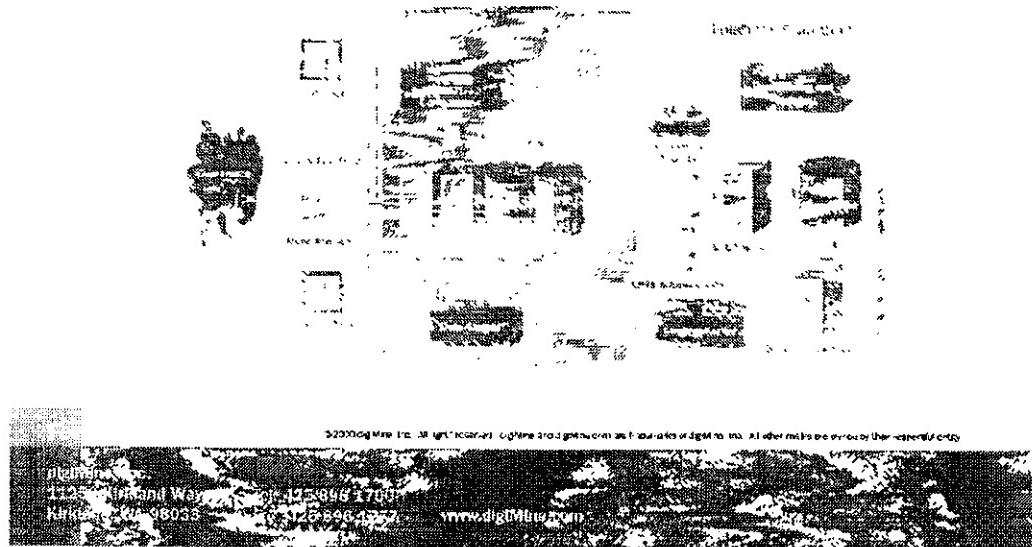
digIMine offers the fastest time to deployment. In fact, a typical installation allows us to setup and begin daily reporting within a few days. In many cases, our customers have full analytics in less than 24 hours.

digIMine™ Services do not require you to invest in additional IT resources, nor do we require you to deploy data tags. We simply install a digIMine Slurper™ at your data center that encrypts and compresses your data for transmission at pre-determined times. digIMine's Slurper™ is a simple piece of software that has the ability to pull web server logs and gather data from any OLE-DB-compliant database - from Oracle, SQL, DB2 and others. This process does not compromise your network security or require you to open your firewall!

Once your data is transferred to digIMine's data center, it is parsed, cleaned and loaded into a secure data warehouse.

digIMine then produces detailed and accurate reports that are delivered 24 hours a day, 7 days a week, 365 days a year. You can access your reports through a dedicated https connection using a standard browser. The reports are completely secure and require user authentication. In fact, as an administrator, you have the ability to set various levels of access permission for different business users in your company. Your data is also made available for export.

digIMine provides data mining services for predictive applications. These predictive components give you the ability to personalize web content and cross-sell or up-sell products. Data mining components run in real-time on your web site or in batch applications, such as targeted e-mail.

*Fig. 19I*

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digIMine Services: Take the Quiz

**MAIN** SERVICES COMPANY MEDIA CENTER CUSTOMER LOG IN  
HOME PAGE Services Company Media Center Customer Log In  
http://www.digimine.com  
1928

## Take the Quiz

With the abundance of sites on the Web it's easy to get lost and forget customers and keep them. Let's face it - within 20 seconds a user will leave your "front door" off the specific content on it if presented with something else to click on. That's where digIMine will help you...

How many of these questions can you answer correctly? You'll get along if you can click "Answer" as soon as you digIMine, you'll get points for answering all of those questions correctly.

How many customers came to your site yesterday?  
 How many were first time visitors?  
 Can you get a list of those new customers and send them a thank you the next day?  
 What are most visited products are on your site?  
 What products should you continue making "hot" products to attract new customers?  
 What are your top selling products or services? Have they changed on the last month?  
 How many shoppers go through your home page?  
 Which marketing publications are most often used by many new customers to your site?  
 Which customers are likely to "lurk" and which are loyal shoppers on your site?  
 What is the expected "life time value" of your customers?



<http://www.digimine.com/services/quiz.htm>

*Fig. 19J*

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**1905**

**How digiMine Works**

digiMine services do not require any additional investment in IT resources. You do not have to hire you to deploy data logs. We simply install a digiMine Data Sampler™ at your data center that encrypts and compresses your data for transmission at predetermined times. digiMine's Data Sampler™ is a simple software application that has the ability to collect server logs and gather data from any commercial database such as Oracle, SQL, DB2, and others. This process does not compromise your network security or require you to open your firewalls. Alternatively, you can also send your data to us through a secure email transfer.

Once log data is transferred to digiMine's data center, it is parsed, cleaned and classified; a secure data warehouse. We can also merge multiple sources and correct your data.

We then employ our unique data mining techniques. These techniques are designed to find hidden relationships. The results are available via reports, dashboards, and graphs that are available 24 hours a day, 7 days a week, 365 days a year. Your reports run with a dedicated and secure authentication using a standard browser.

Periodic data mining engagements for executives, called from 1994 to 1998, are conducted monthly on the digiMine data to refine any inquiries or to get a report. These are strictly confidential from web visitors if requested, publications can be targeted as well.

<http://www.digimine.com/services/howworks.htm>

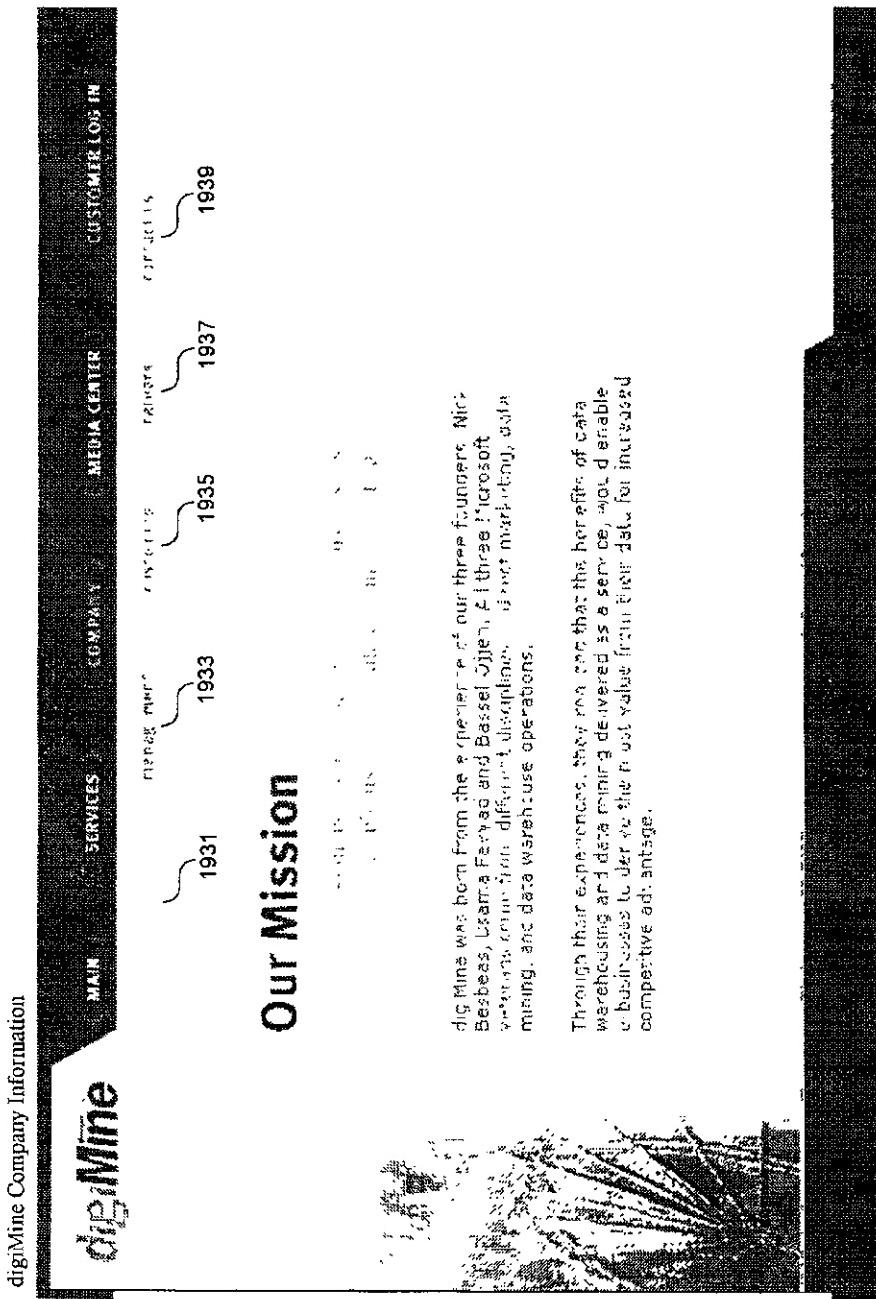
**Fig. 19K**

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<http://www.digmine.com/company/>

*Fig. 19L*

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## Management

digIMe Company Information Management



1941 1943 1945 1947 1949

Pete Finch, 30+ yrs.  
Executive VP to 2nd Merchant, 30 yrs.  
CEO, 10 yrs.  
Chairman, 4 yrs.  
President of several firms

Mayfield Fund  
Second Avenue Fund  
Leading Edge Investments (Amazon.com, Unilever, Intel, etc.)  
Kleiner Perkins Caufield & Byers (KPCB) (F500, F5000)  
Co-Sys (1982, now part of Bell)  
Sam Jaffell (Intel, AT&T, Lucent, Qualcomm, formerly  
Kitschy's, 20 yrs.)  
James Weinkauf (1984, Director, Mutual Capital Fund)  
Deutsche Bank Technology Fund, former President, and  
Silicon Valley Angels (Invested in Forest City stage companies  
today).



*Fig. 19M*

<http://www.digime.com/company/management.htm>

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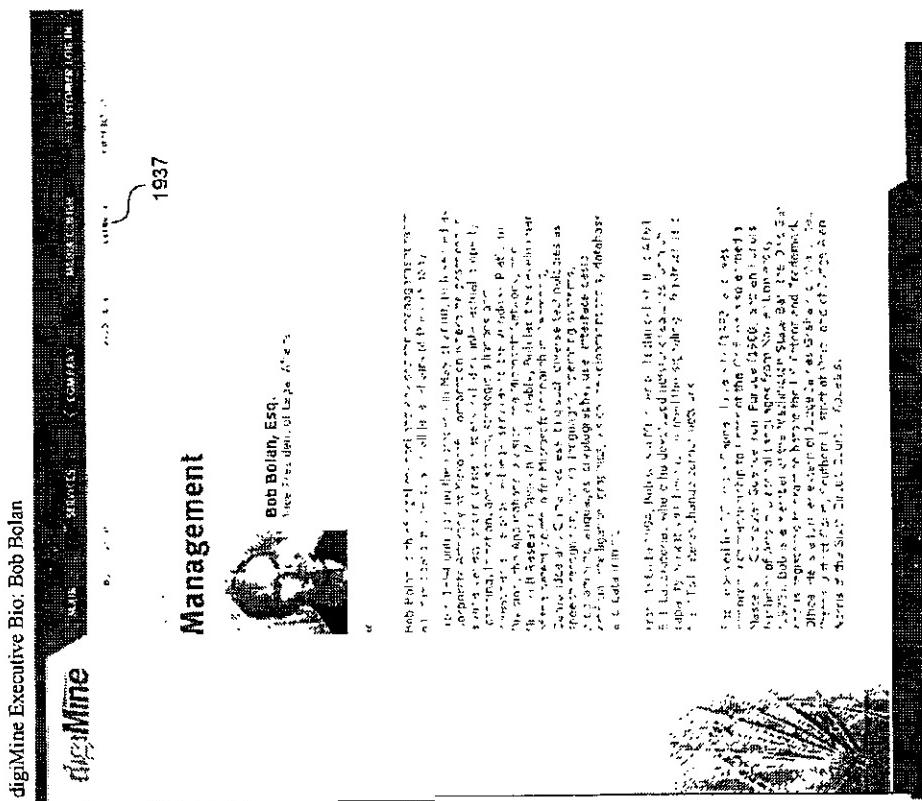


Fig. 19N

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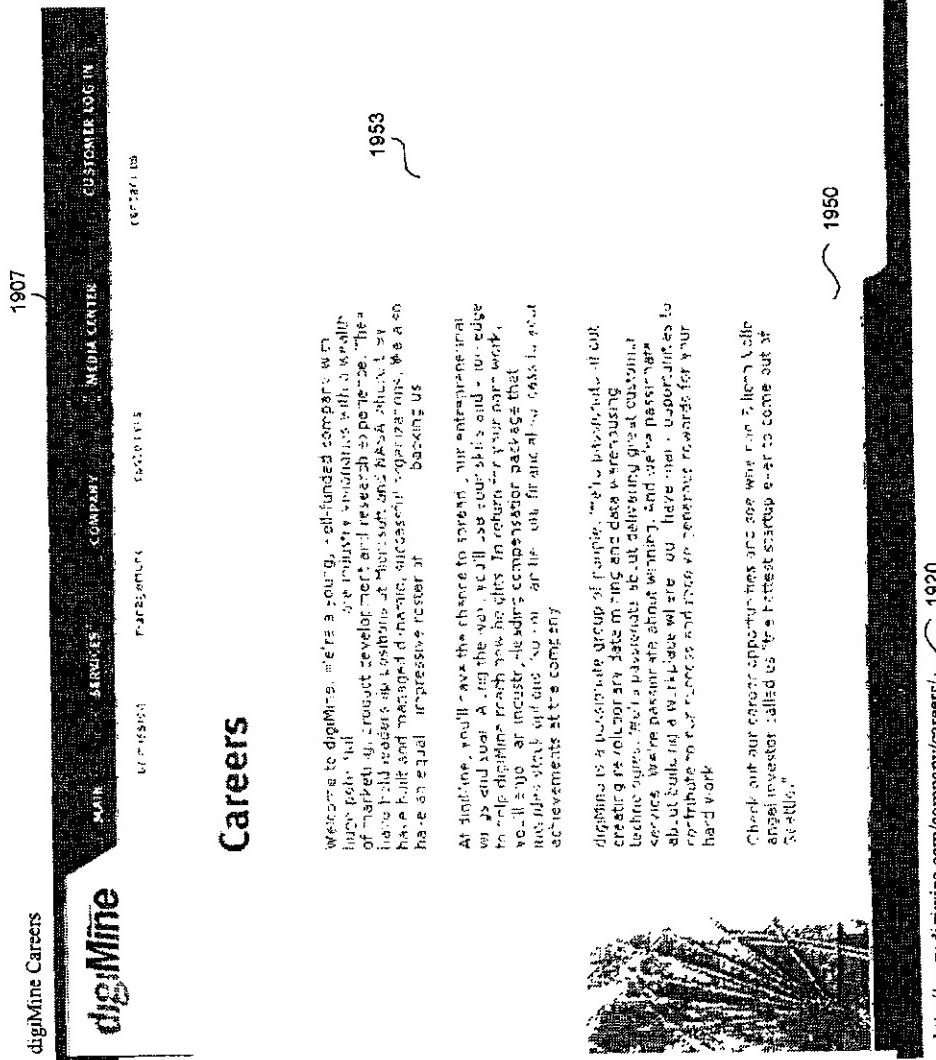


Fig. 190

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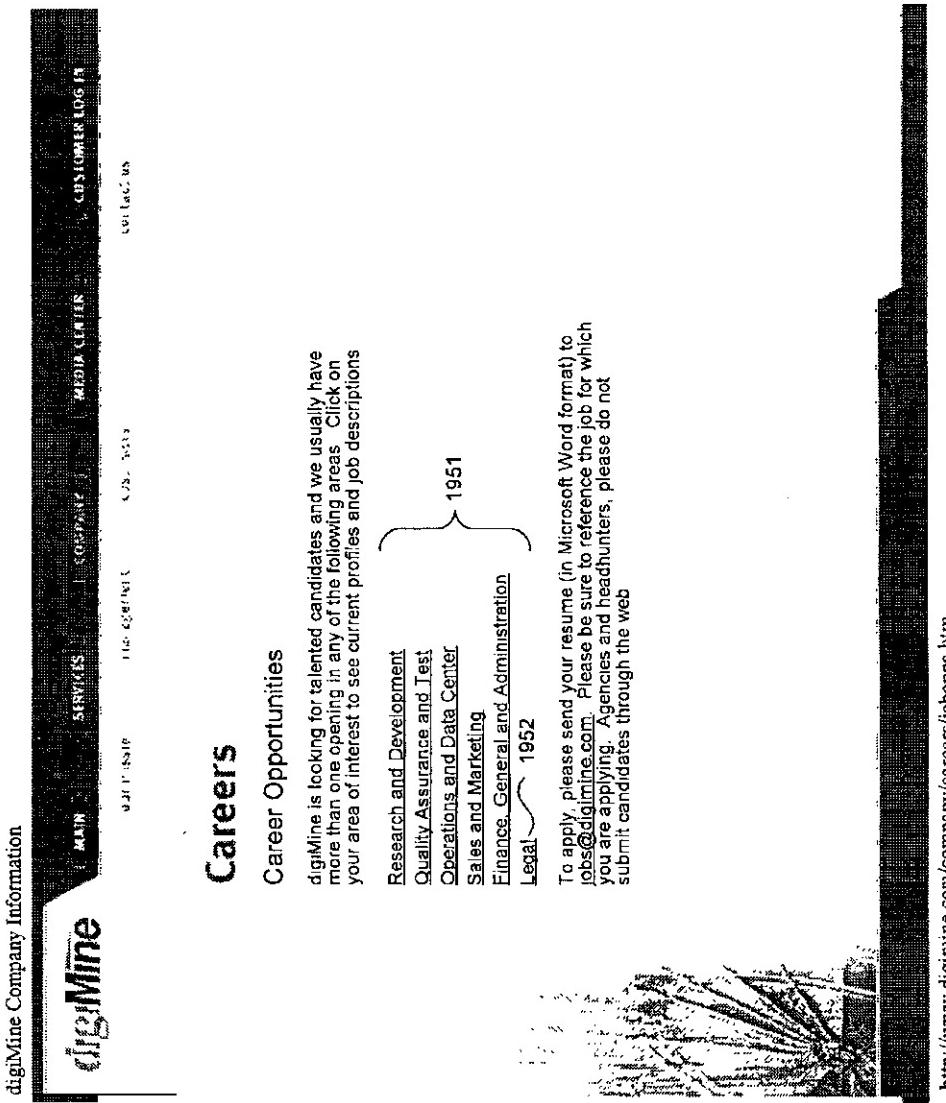


Fig. 19P

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1907

The screenshot shows a website layout for digiMine. At the top, there's a navigation bar with links for 'HOME', 'SERVICES', 'COMPANY', 'MEDIA CENTER', and 'CUSTOMER LOG IN'. Below the navigation, there's a search bar with placeholder text 'Search...'. On the left, there's a sidebar with a 'digimine' logo and a 'digiMine Company Information' section. The main content area has a title 'Careers' and a sub-section 'Legal Positions'. A link '« job categories' is visible. The central part of the page displays a job listing for a 'Corporate Attorney - Intellectual Property' position. The listing includes a responsibilities section and a requirements section, each with a bulleted list of items. The responsibilities list includes items like 'Principal responsibility for management of all patent procurement and conflict matters', 'Review ideas for strategic importance and patent viability.', etc. The requirements list includes items like 'Excellent academic credentials', '5+ years experience in patents required, including preparing and prosecuting patent applications, opinion work (invalidity/non-infringement), licensing, and/or litigation', etc.

**Careers**

Legal Positions

« job categories

**Corporate Attorney - Intellectual Property**

**Responsibilities**

- Principal responsibility for management of all patent procurement and conflict matters
- Review ideas for strategic importance and patent viability.
- Work closely with outside counsel to develop claim scope and prosecution strategy, and supervise them throughout the process
- Analyze third party patents and determine best resolution, including licensing, product modification and liability studies.
- Counsel development and business clients on patent-related issues.
- Provide support for patent litigation.

**Requirements**

- Excellent academic credentials
- 5+ years experience in patents required, including preparing and prosecuting patent applications, opinion work (invalidity/non-infringement), licensing, and/or litigation
- Significant computer industry experience highly desirable.
- Advanced technical degree a plus

1920

<http://www.digimine.com/company/careers/legal.htm>

Fig. 19Q

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**digiMine Media Page**

**MAIN**      **SERVICES**      **COMPANY**      **MEDIA CENTER**      **CUSTOMER LOG IN**

1955      1957      1959

1949      press releases

**digiMine wants to turn data into gold**

The algorithms and data-mining software created by Usama Layyad have been used to find volatines on Venus and galaxies far, far away. Now the former scientist at NASA's Jet Propulsion Lab is using the same technology to create digiMine...

Please direct all press related inquiries to:

The sixth annual **WIA industry achievement awards**

digimine services selected as finalist for Industry Achievement Award!

January 17, 2001 Technology Review, MIT's Magazine of Innovation, Names digiMine CEO Umar Farooq to Top 20

December 18, 2000 digiMine partners with Emo to Provide Data Warehousing and Data Mining Services

**Press Release**

<http://www.digimine.com/mediacenter/>*Fig. 19R*

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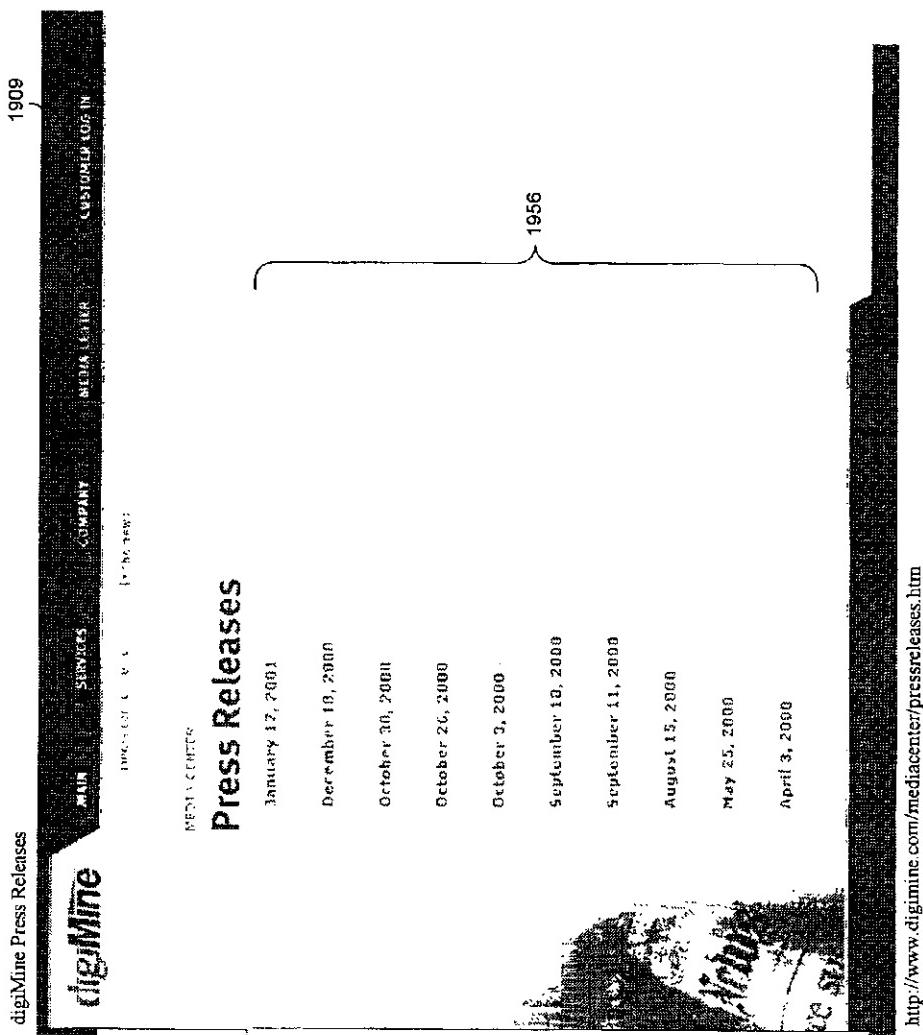


Fig. 19S

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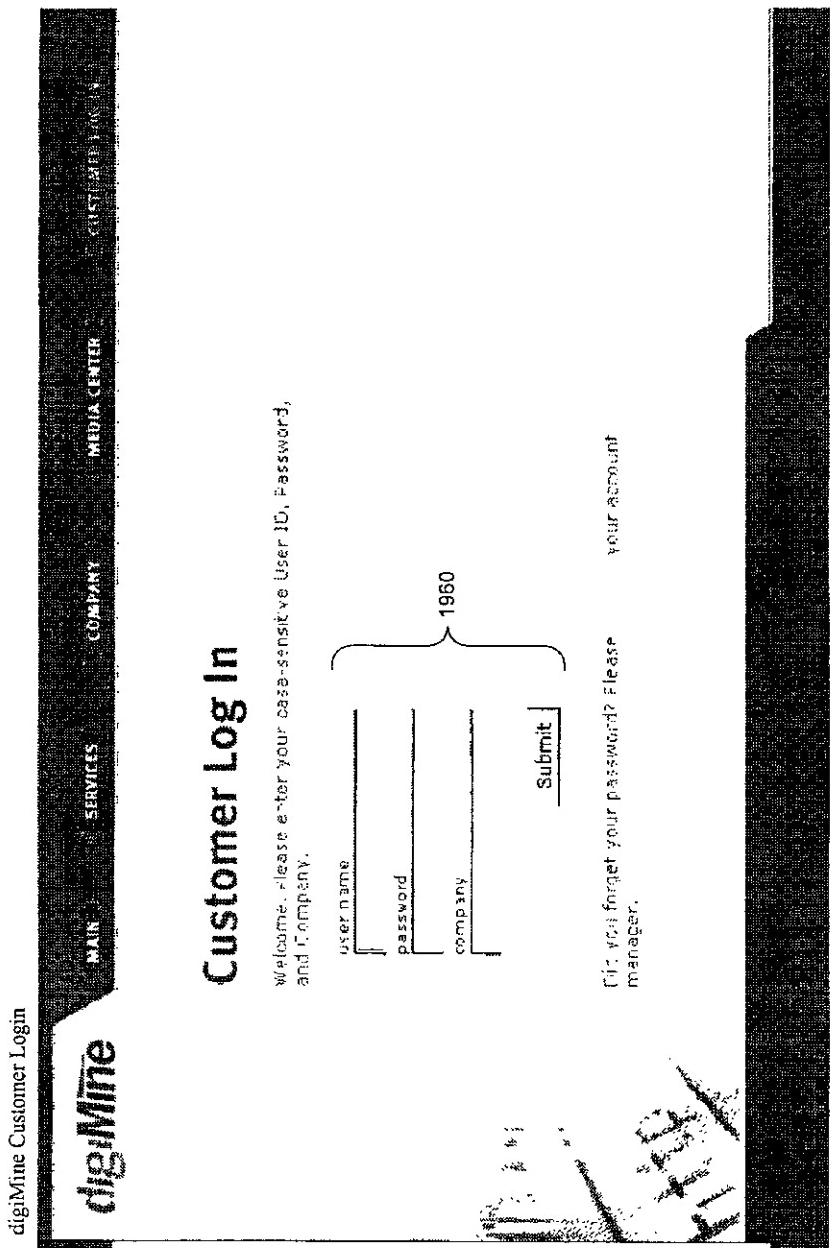


Fig. 19T

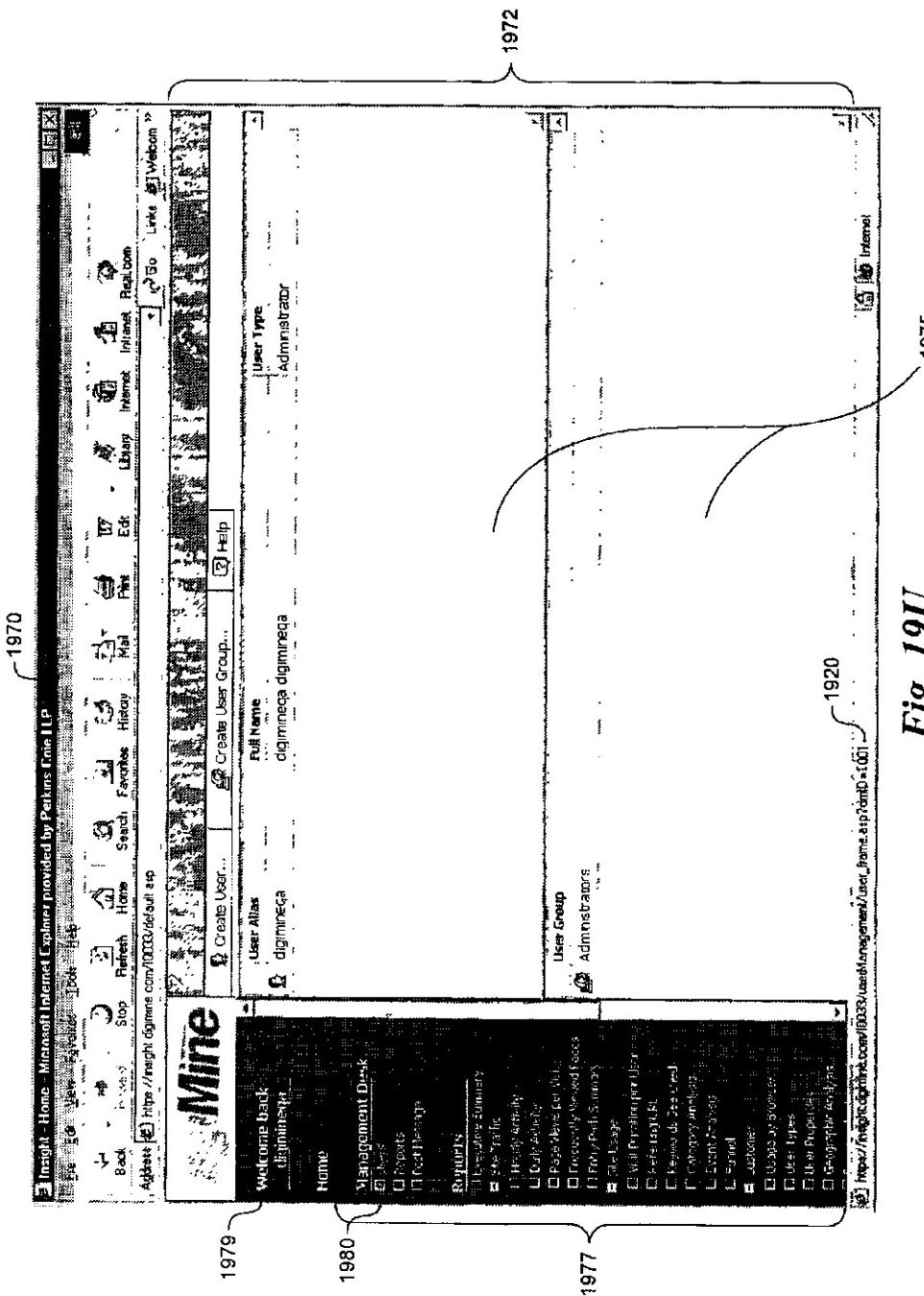
1920  
https://insight.digimine.com/

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Fig. 19U  
1975

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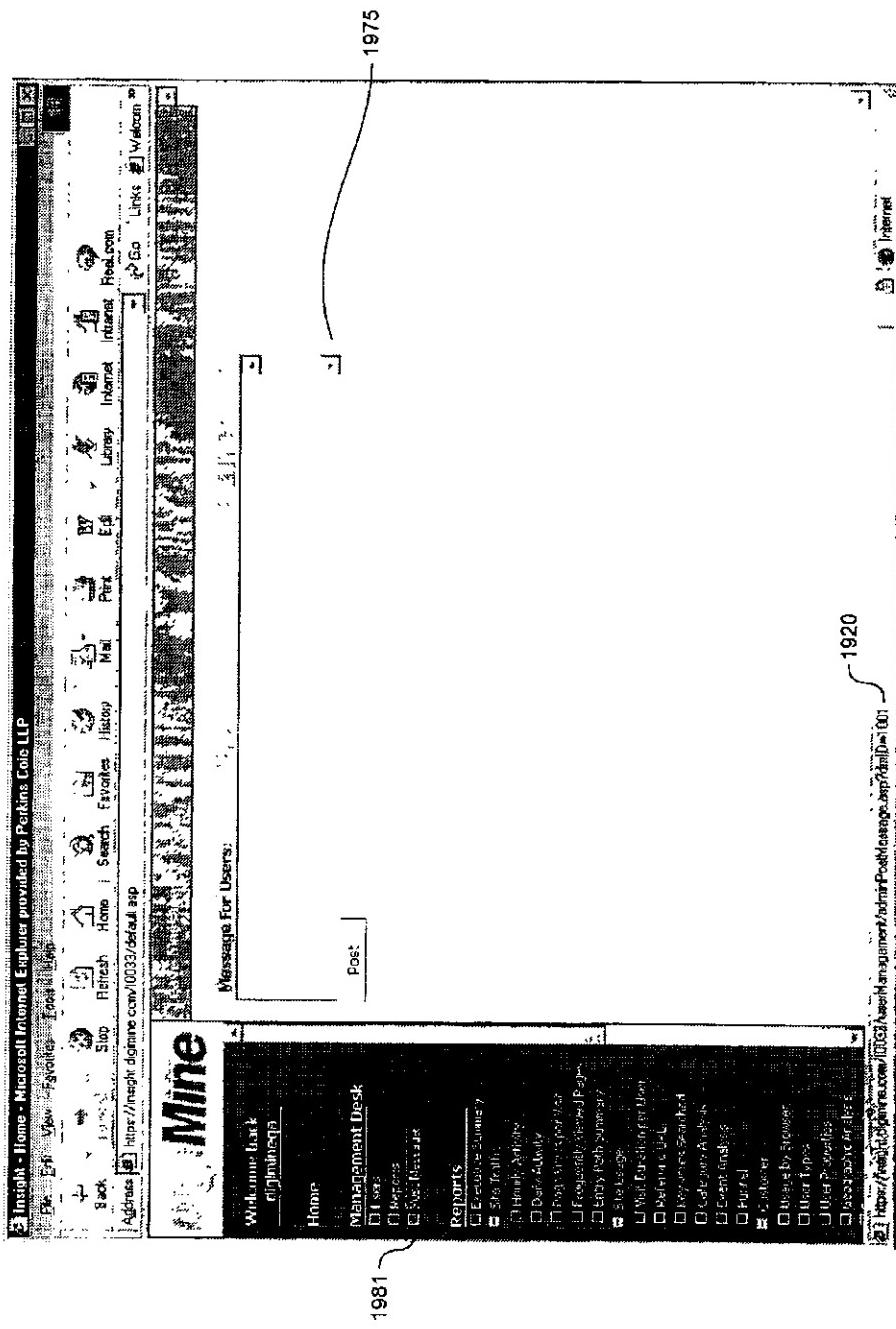


Fig. 19V

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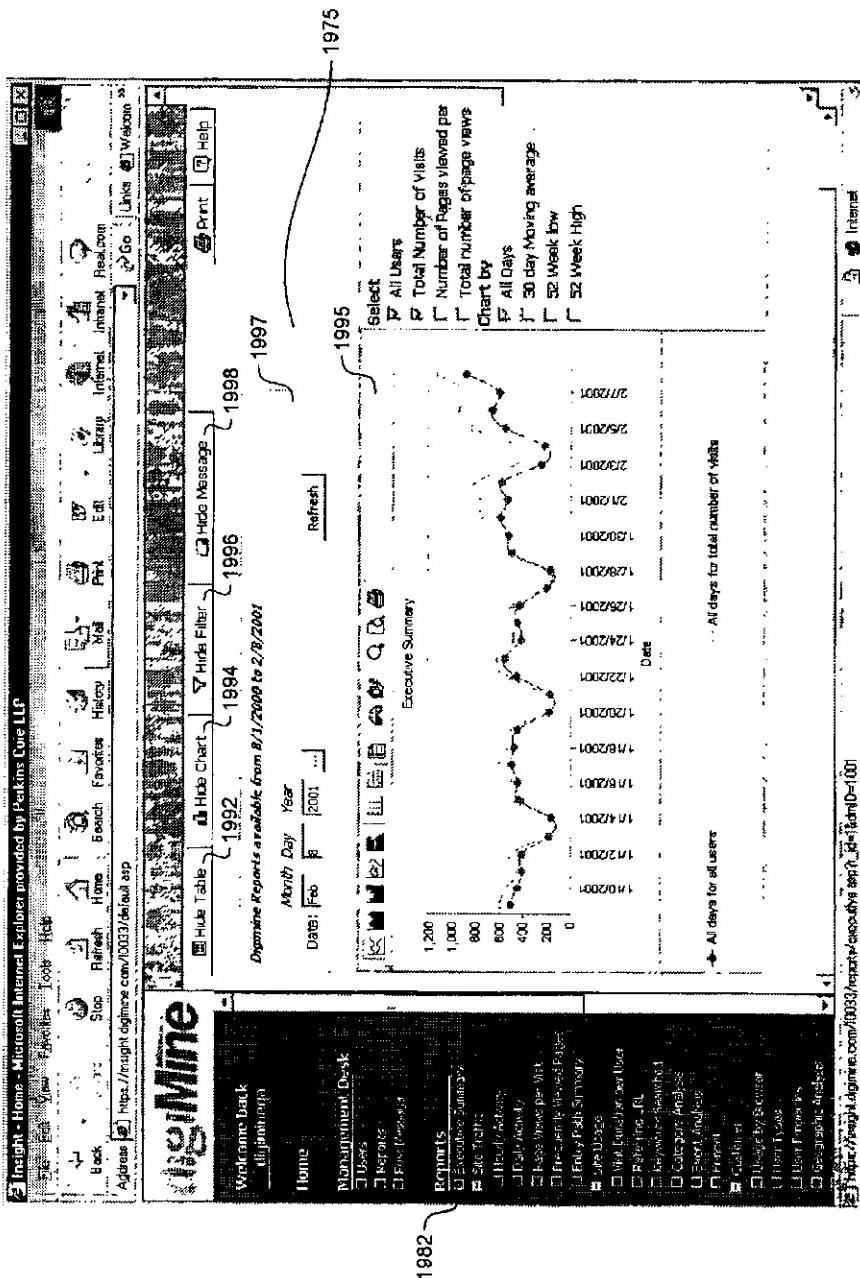


Fig. 19W

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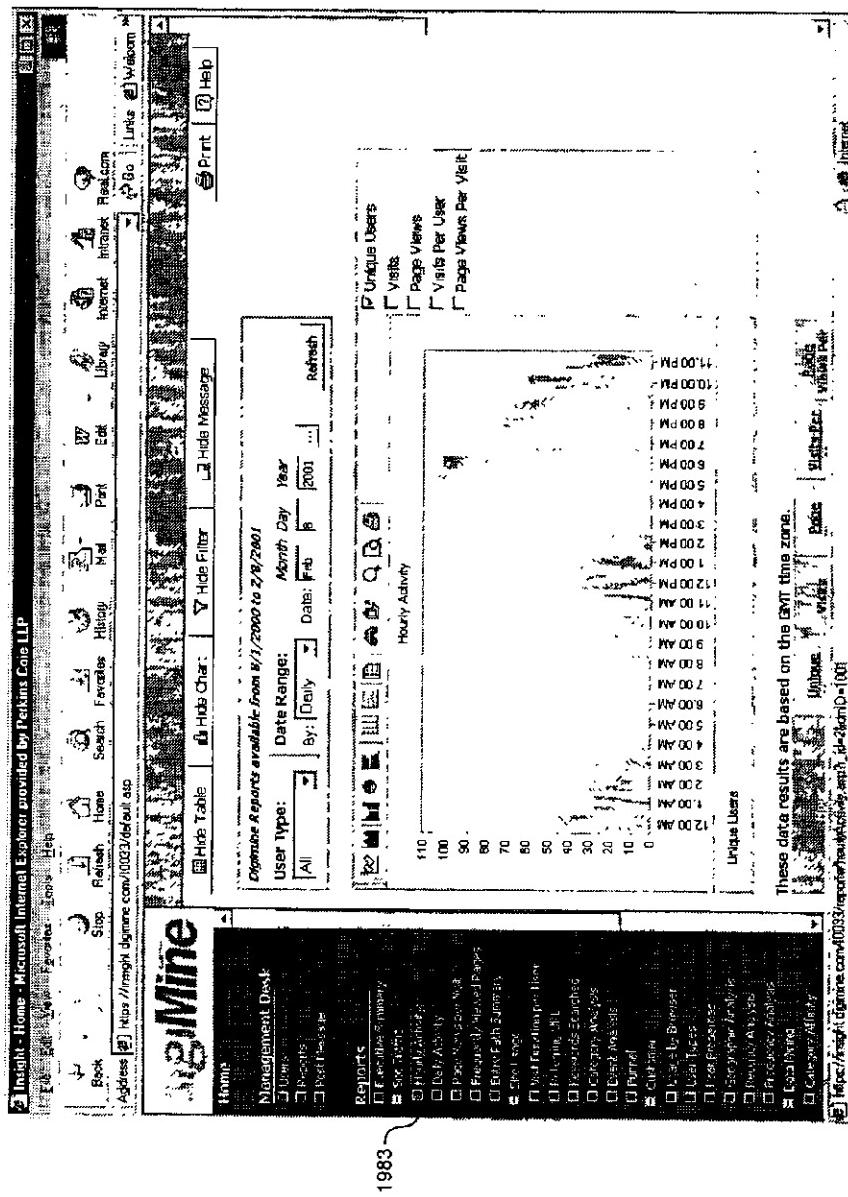


Fig. 19X

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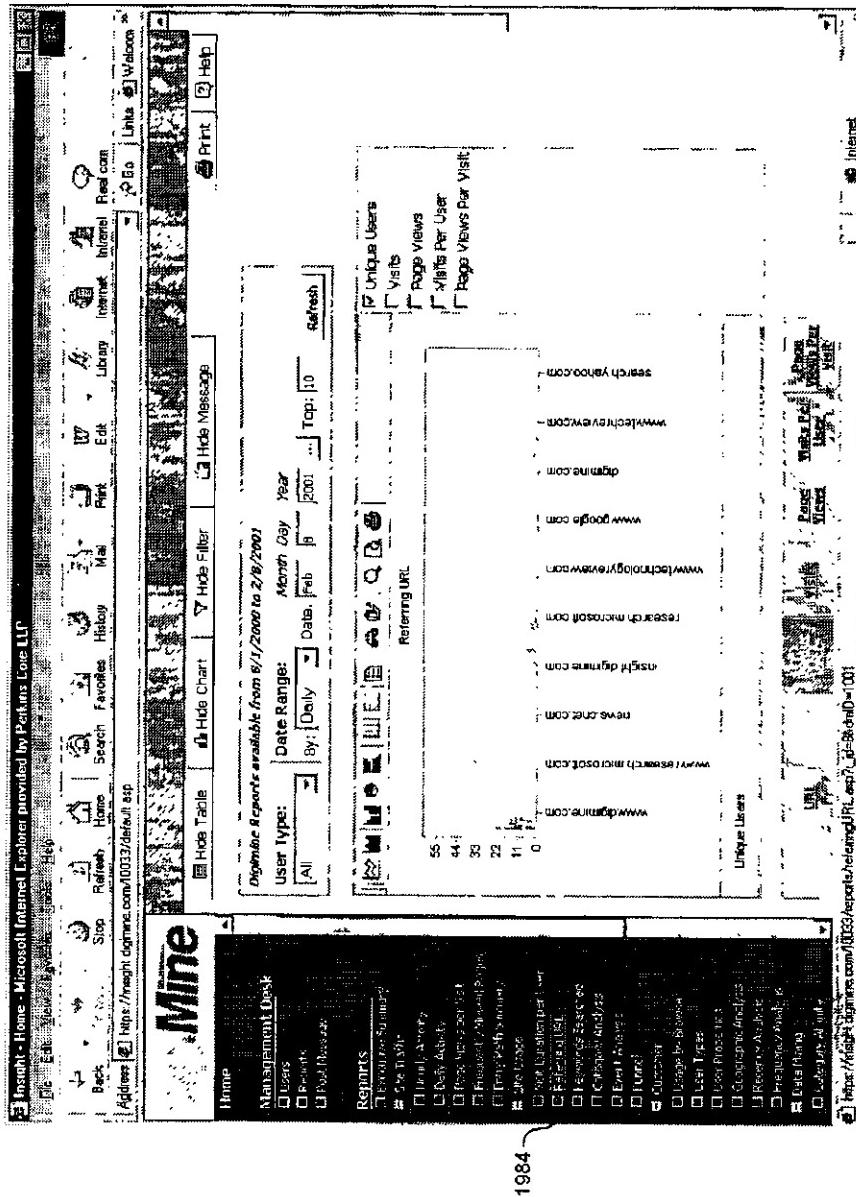


Fig. 19Y

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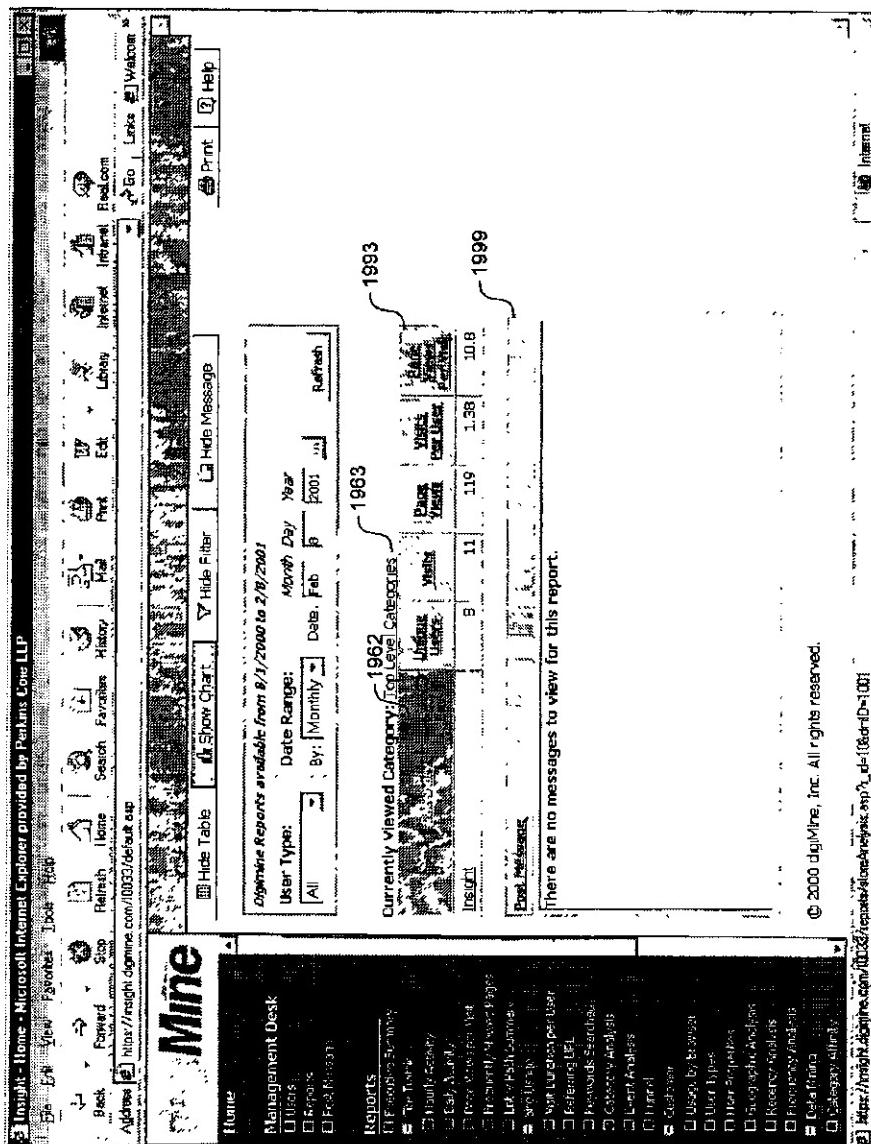


Fig. 19Z

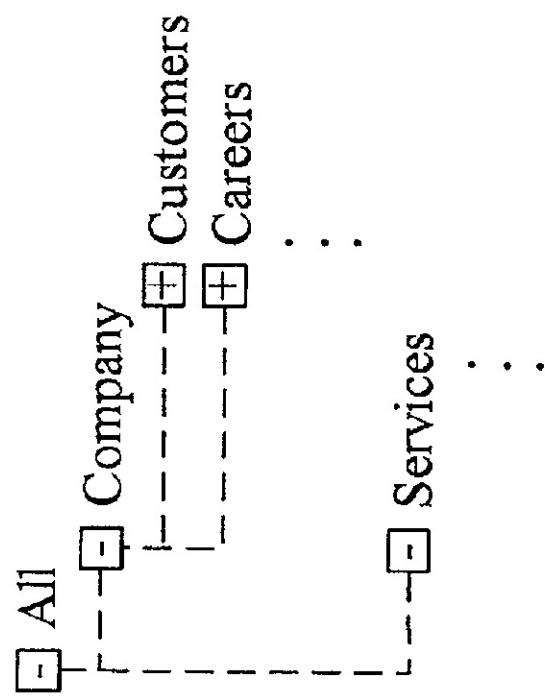
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Example Hierarchical Category Selection



*Fig. 19AA*

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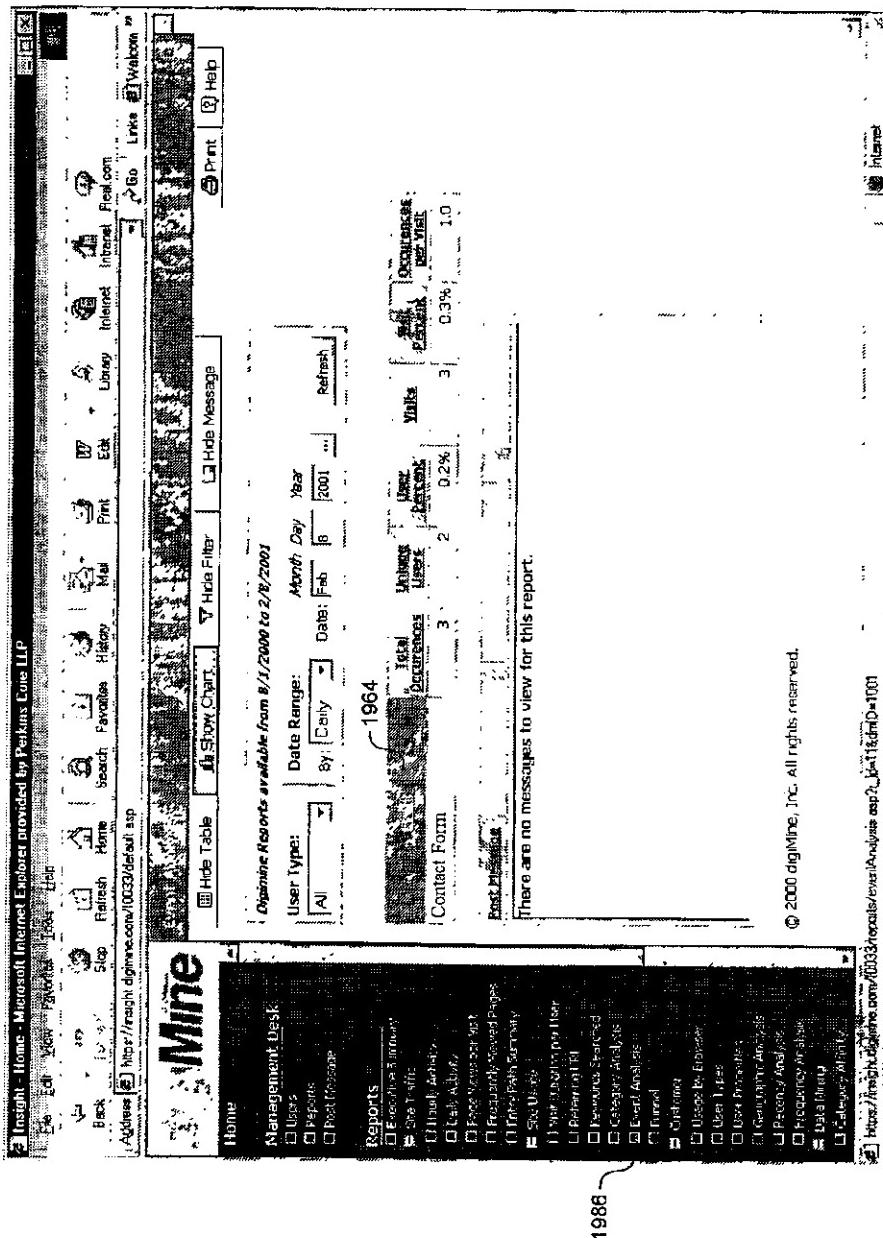


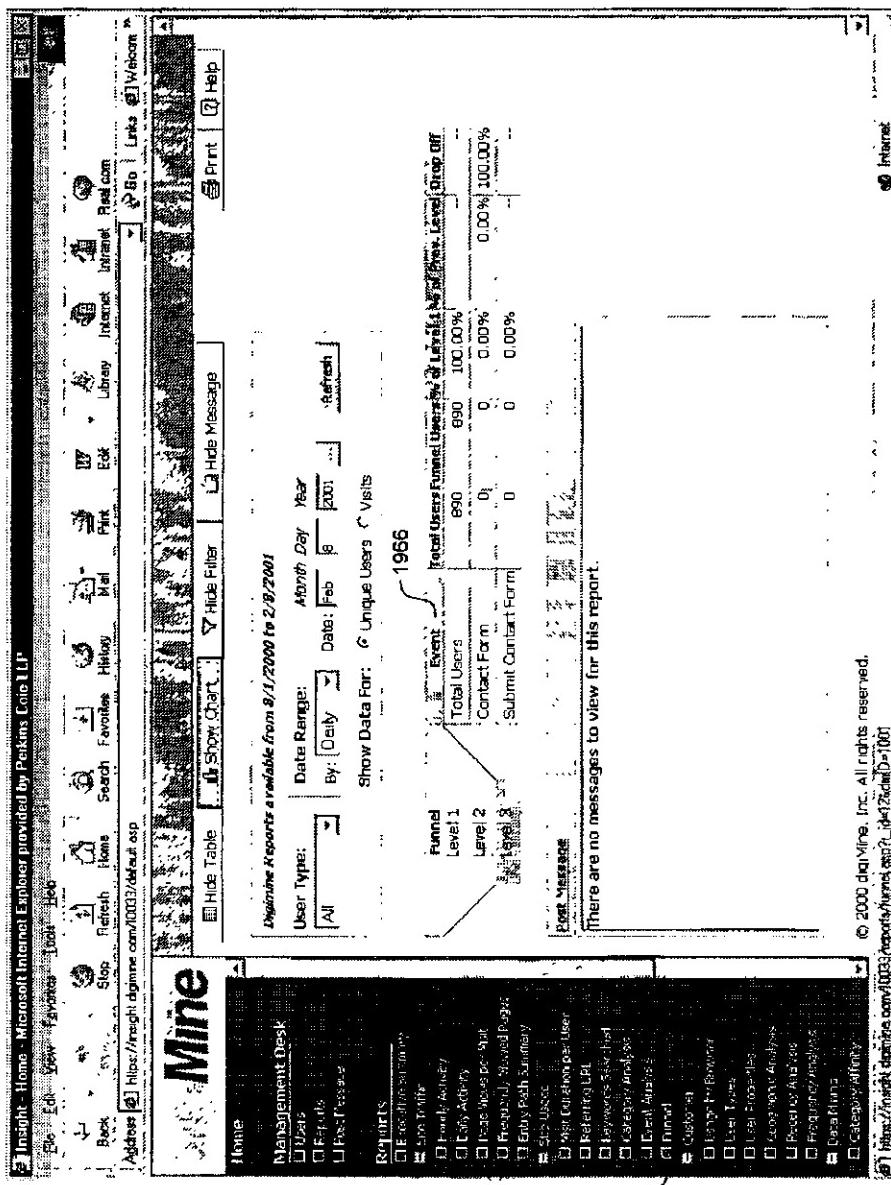
Fig. 19AB

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Fig. 19AC

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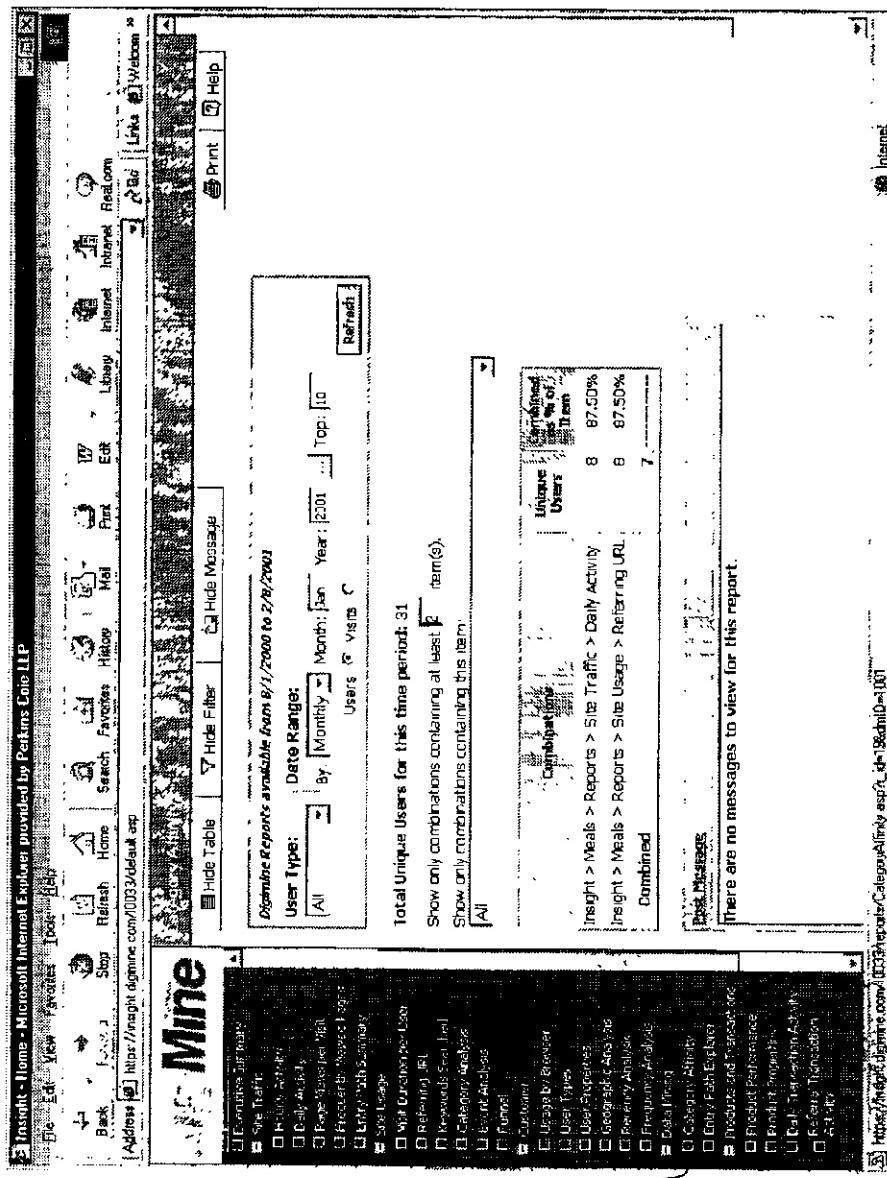


Fig. 19AD

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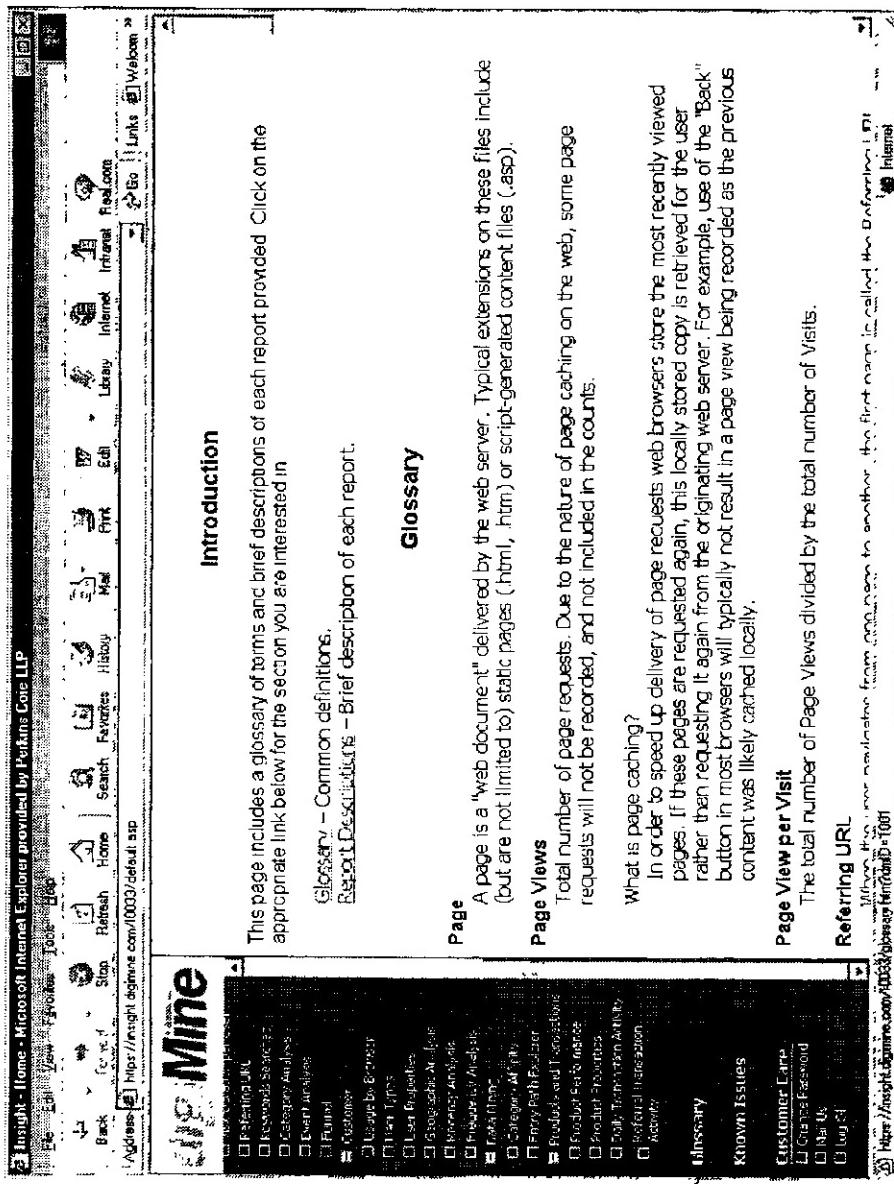


Fig. 19AE

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**digimine Services Overview**

**Overview**

(91 kB, Requests.xls)

digimine is setting new standards in the delivery of advanced analytics, data warehousing and data mining for eBusinesses. As an application service provider (ASP), we deliver a comprehensive and affordable solution that is quick to deploy and easy to use.

What truly sets digimine apart from the competition is our ability to go far beyond today's web reporting services by using the most powerful data mining and personalization tools. By applying high-end data mining algorithms to the full range of click stream, user registration, product catalog, campaign and transaction data, we provide you with the most relevant business intelligence. And we enable you to take action with precision and speed.

digimine SMI Services include:

- { 1. digiMine Warehousing Services ~ 1912
- { 2. digiMine Analytic Services ~ 1914
- { 3. digiMine Data Mining Services ~ 1916
- { 4. digiMine Data Generation Services ~ 2005

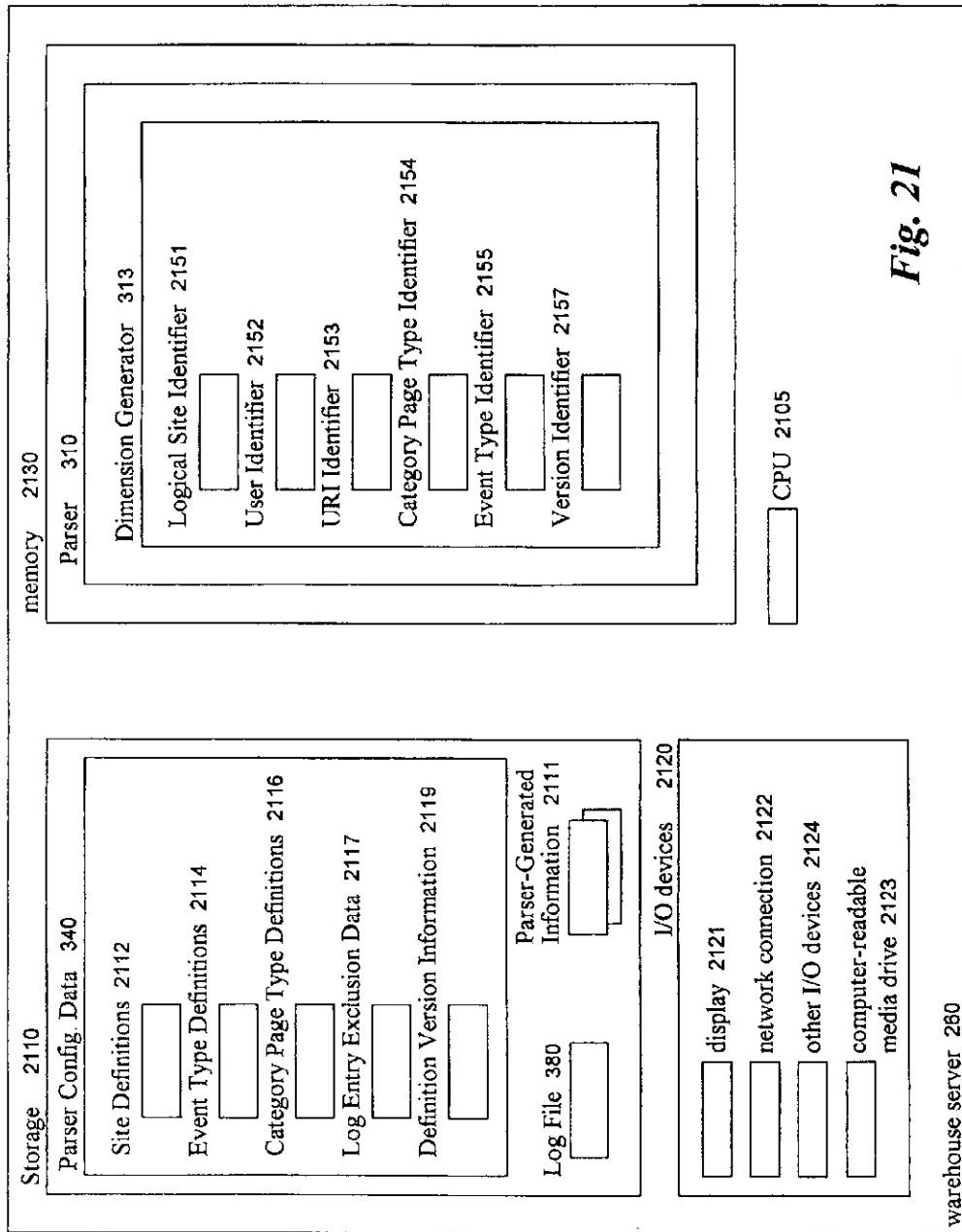
<http://www.digimine.com/services/>

**Fig. 20**

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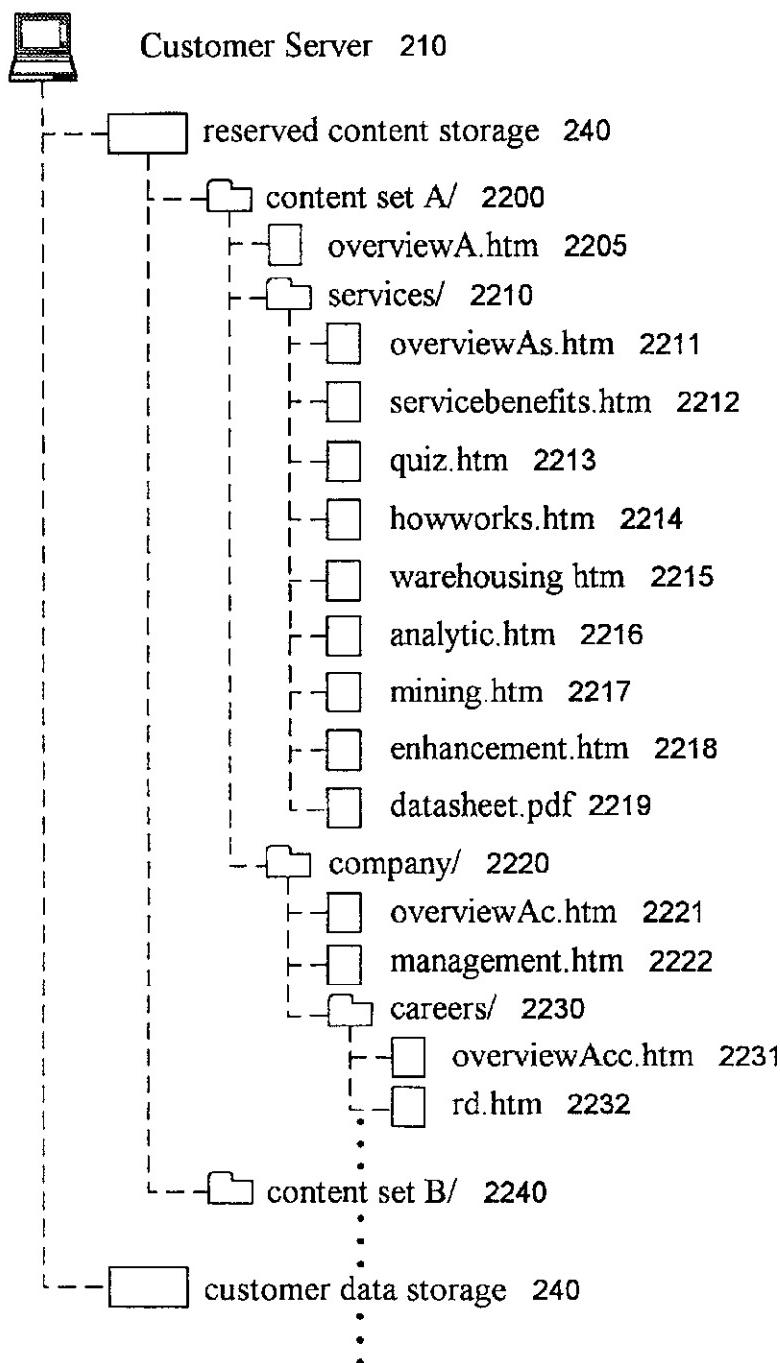
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*Fig. 22A*

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**Content Set A**  
**Category Hierarchy Table 2250**

Category 2251	ID 2252	Category Parent 2253
Services	1	—
Company	2	—
Media Center	3	—
Analysis	4	—
Service Benefits	5	1
Take the Quiz	6	1
⋮	⋮	⋮
Careers	20	2
⋮	⋮	⋮
R&D	30	20
QA	31	20
⋮	⋮	⋮

**Content Set A Content Category Table 2260**

Content 2261	Category Page Type Definition ID 2262
overviewA.htm	—
overviewAs.htm	1
servicebenefits.htm	1
⋮	⋮
rd.htm	30
⋮	⋮

***Fig. 22B***

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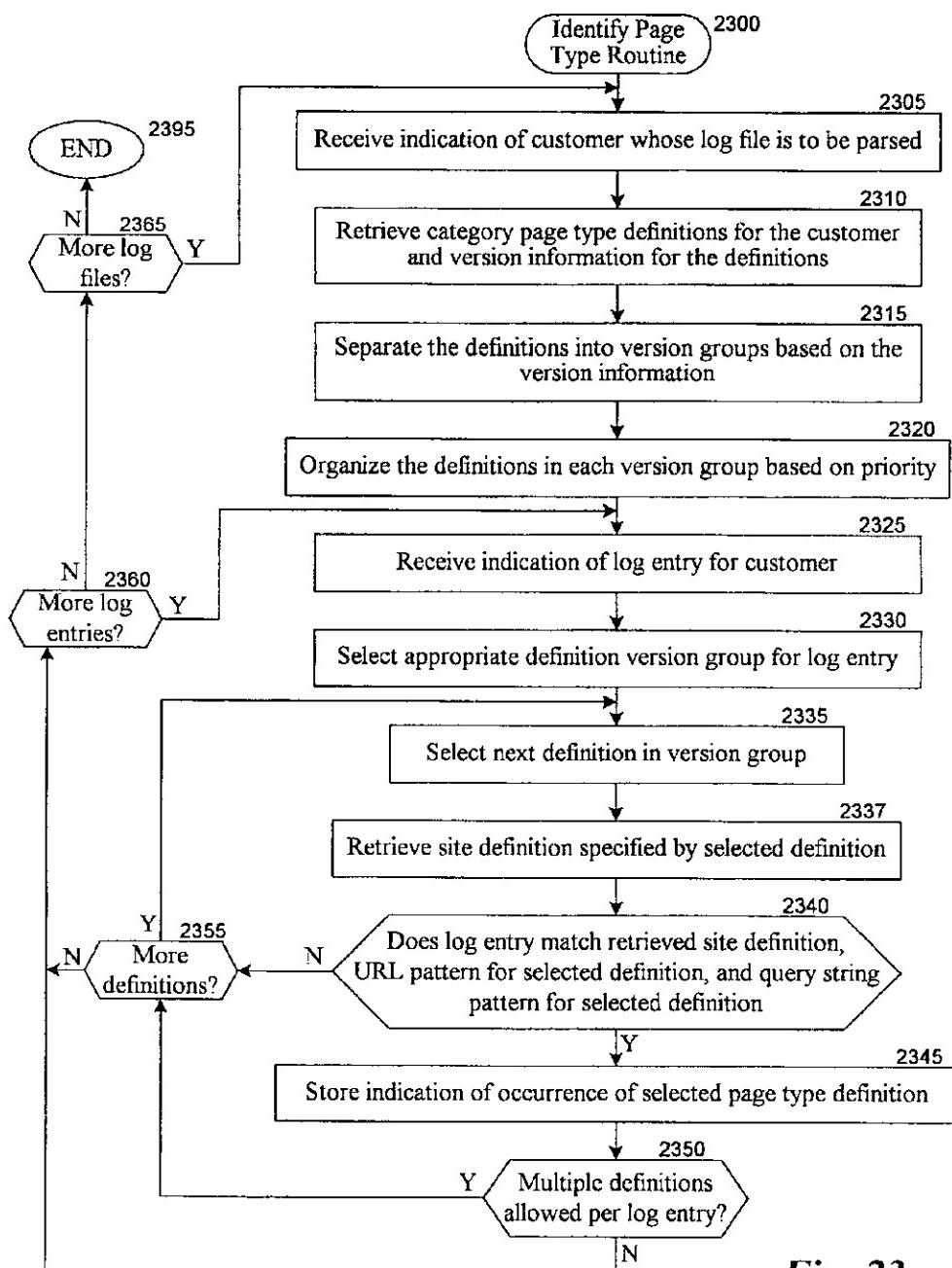


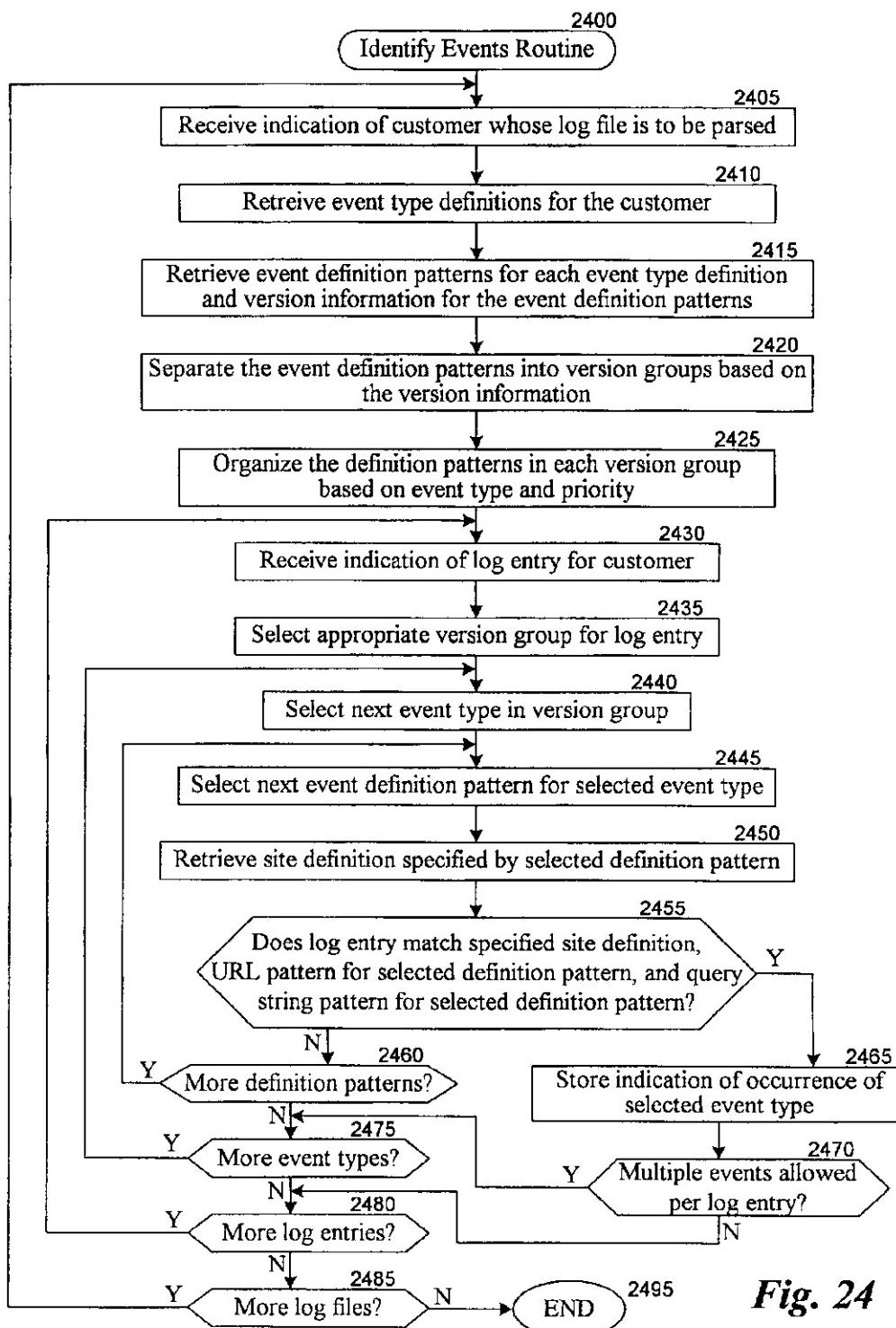
Fig. 23

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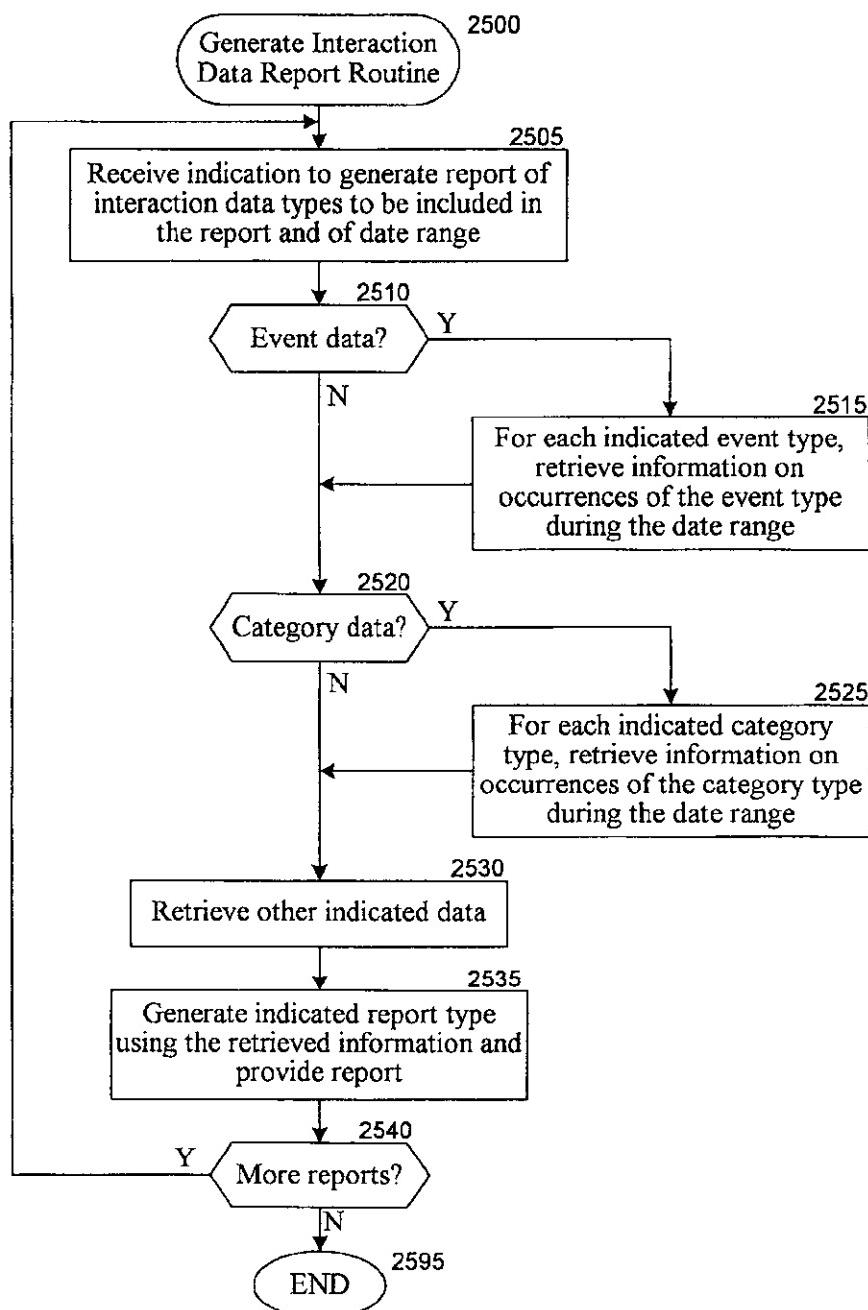
**Fig. 24**

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*Fig. 25*

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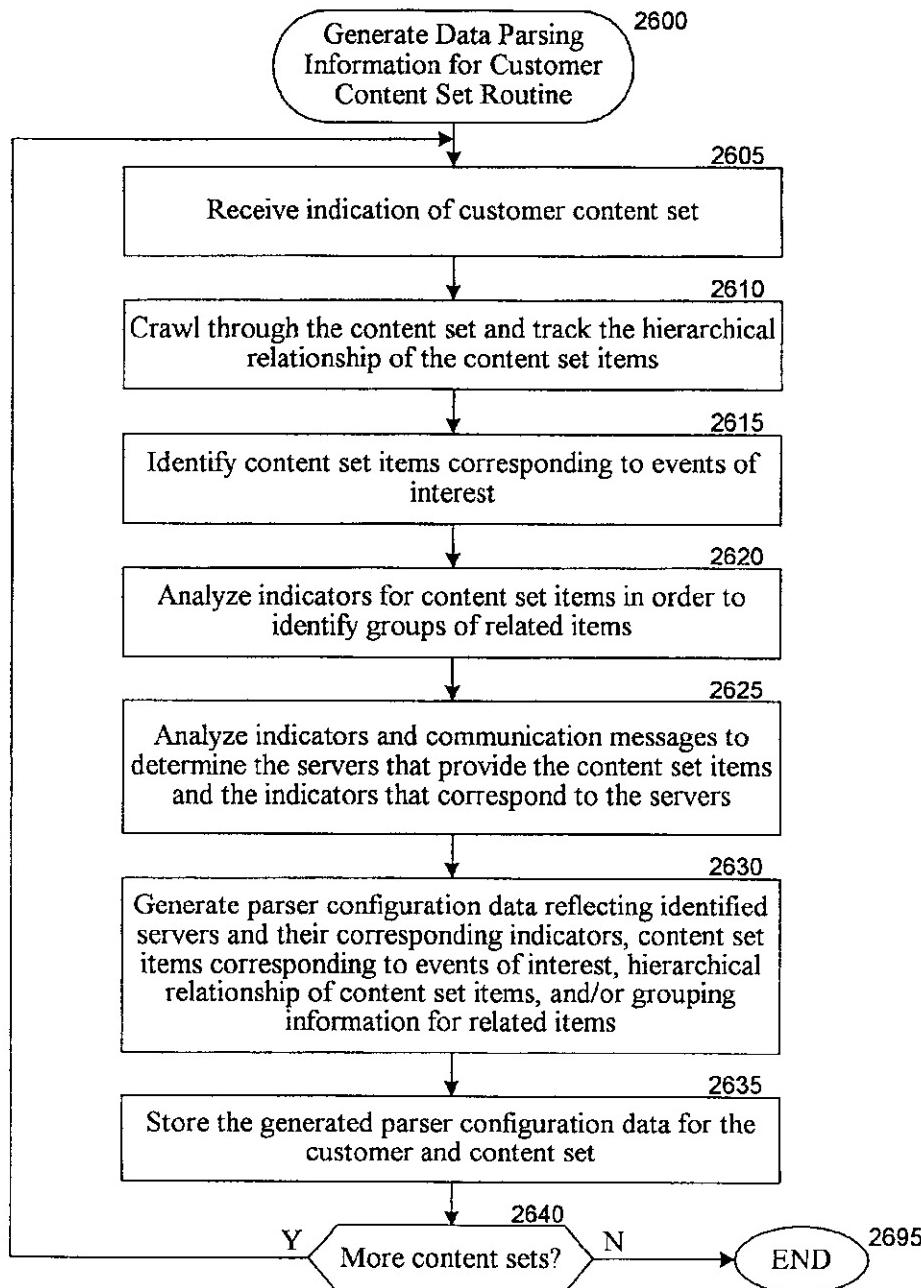


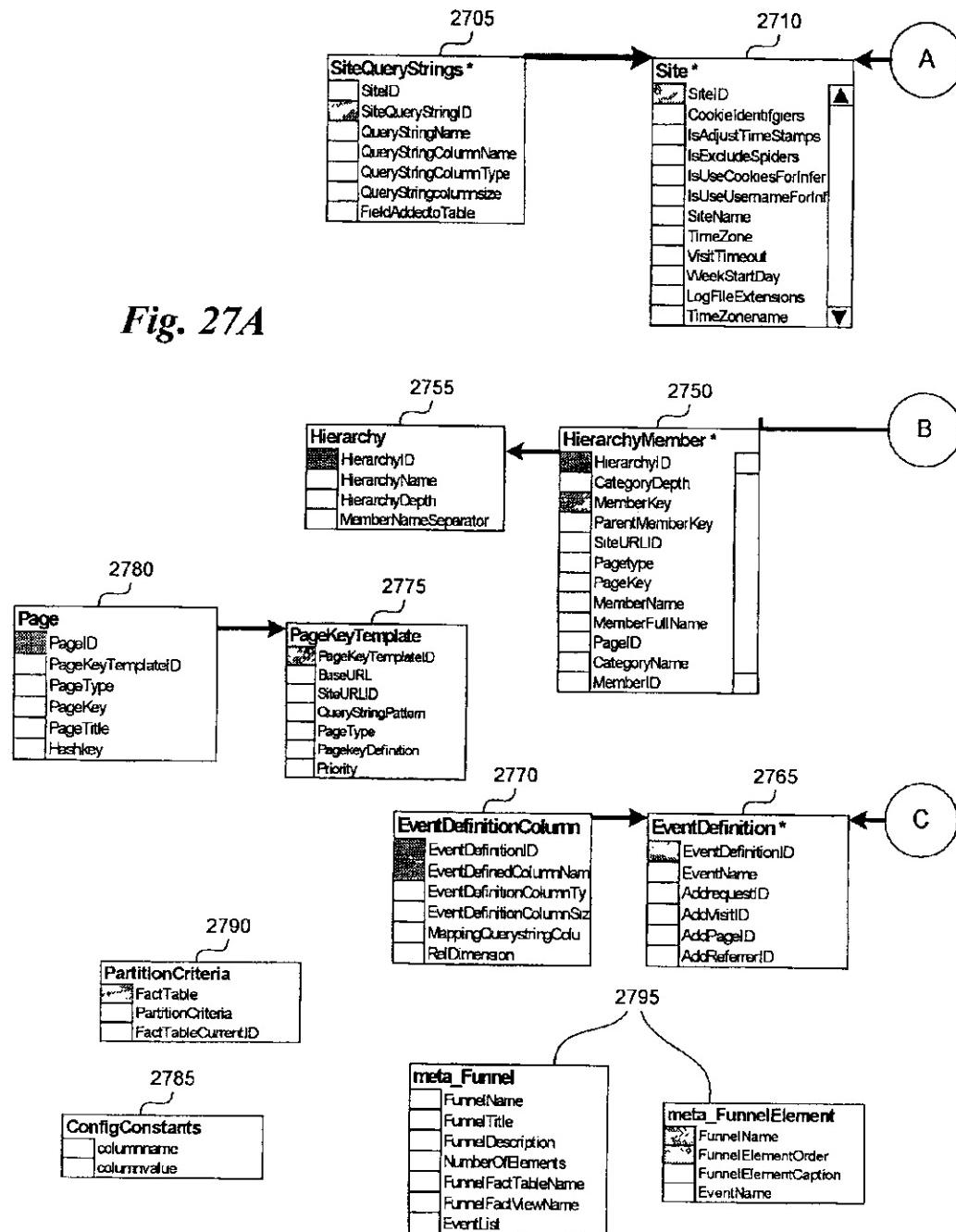
Fig. 26

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